The Internationalization process of the Science4You firm

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Abstract

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Firms' international expansion has been viewed as a gradual and incremental process for a long time. According to this stage approach, firms' international knowledge is acquired through the experience gained in the foreign expansion process and, it has for the long time been considered the main driver of the increasing international commitment of companies. However, with the emergence of phenomena such as globalization or technological changes, the internationalization pattern has changed.

The purpose of this study is to explore the internationalization process of Science4you firm. With this objective, a qualitative study was conducted. In particular, the topic was investigated by using a single case study based on three semi-structured interviews and secondary data.

The main conclusion of this study is that both theoretical perspectives – *born global* phenomenon and Uppsala model - could be seen as complementary in explaining the internationalization process of Science4You, showing that the traditional model is still valid to explain internationalization of new ventures that expand abroad early on.

Key words: internationalization, Uppsala model, *born global* phenomenon, Science4You, globalization.

Sumário

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Título: The Internationalization process of the Science4You firm.

A expansão internacional das empresas foi vista como um processo gradual e incremental durante um longo período de tempo. De acordo com esta abordagem sequencial, o "know-how" internacional das empresas é adquirido através da experiência que advém do processo the internacionalização e que, durante muito tempo, foi considerada a maior responsável pelo aumento do compromisso internacional das empresas. No entanto, com a emergência de fenómenos como a globalização ou as mudanças tecnológicas, o padrão de internacionalização tem vindo a sofrer alterações.

O objetivo deste estudo é explorar o processo de internacionalização da empresa Science4You. Tendo em vista este objetivo, foi conduzido um estudo qualitativo. Em particular, o tema foi investigado através do uso de um único caso de estudo baseado em três entrevistas semiestruturadas e em dados secundários.

A conclusão principal deste estudo é que as duas perspetivas teóricas – fenómeno *born global* e o modelo de Uppsala – podem ser vistas como complementares na explicação do processo de internacionalização da empresa Science4You, demonstrando que o modelo tradicional ainda é considerado válido para compreender o processo de internacionalização de empresas que se expandem numa fase inicial das suas vidas.

Palavras-chave: internacionalização, modelo de Uppsala, fenómeno *born global*, Science4You, globalização.

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Introduction

The internationalization process of firms has been a central research topic within the international business field over last decades. Despite the trade between nations has been a reality for several centuries, the interest in international business has been growing over the years and, firms' foreign expansion has become one of the most important topics in the contemporary business strategy (Nordstrom and Vahlne, 1990). As a consequence, several authors developed frameworks of internationalization process of firms with the aim of understanding the mechanisms associated with obtaining and sustaining competitive advantage across national borders (Casadesus-Masanell and Ricart, 2010). The traditional theories considered the internationalization of firms as a slow and incremental process where companies gradually increase their involvement in global activities as they acquire international experience (Calof and Beamish, 1995; Johanson and Vahlne, 1977; Welch and Luostarinen, 1988). However, due to phenomena such as globalization or technological changes, the international business environment has been changing since the 1980s (Lee and Slater, 2007). The new international climate decreased the distance between nations and homogenized the markets, allowing firms to take advantage of the opportunities of competing globally (Porter, 1980). As a result, new internationalization models have emerged where the authors tried to understand the recent trend of firms expanding its business across national boundaries almost since the inception (Andersson and Wictor, 2003; Madsen and Servais, 1997; McAuley, 1999; Oviatt and McDougall, 1994; Rennie, 1993).

According to Hill (2009), international expansion is strongly connected with three important decisions that firm must have to consider: which markets to break into, the timing of the entry and the degree of commitment to those markets.

All the internationalization approaches presented in the literature over the last decades have contributed to a deeper understanding of the firms' internationalization process and, since the obstacles faced by the new entrants in the international market are distinct from those experienced by the firms in the past, it is crucial to verify to what extent the traditional model – Uppsala model - is applicable in the current times. In this research, the conclusion is that both theories could be seen as complementary in explaining the firms' internationalization process, showing that the traditional model - Uppsala model - is still valid within the modern foreign expansion.

The purpose of this study is to explore the internationalization process of Science4you firm. The author of this research was interested in analysing the firm's foreign expansion and its peculiarity.

To achieve the aforementioned goals, the following research questions are posed:

1. Which internationalization model is applicable to foreign expansion of Science4You?
2. Why did the company choose direct exporting through distributors as the main foreign entry mode?
3. What have been the main challenges faced by Science4You in the internationalization process?

This research used a single case study design, being the unit of analysis the Portuguese firm Science4You. It was born in 2008 as a result of an entrepreneurship project of the founder. Since then, the company has sold its products worth around 65.000.000 euro to more than 40 countries and has received several national and international awards which enhanced its international presence.

The current thesis consists of five chapters. Chapter I is devoted to literature review. It presents main theories of international trade as well as it introduces the phenomenon of foreign direct investment (FDI). Moreover, regarding the internationalization of firms, the Uppsala model and the *born global* phenomenon are analysed. Lastly, the foreign market entry modes, and the respective advantages and disadvantages associated with each one of them are also presented.

In Chapter II, case study method is introduced. It is backed by describing different research paradigms and research approaches. Additionally, single case study is presented as the chosen research method as well as the reasons behind the choice of Science4You as the unit of analysis. Moreover, data collection methods used in this research are analysed along with their respective advantages and disadvantages. Lastly, a short explanation regarding the data analysis technique used in this research is provided and case study quality criteria techniques are explained.

In Chapter III, research process is presented in detail. Then, a general overview of Science4You is provided to better understand the business context of the firm. Lastly, the case of Science4You is analysed, giving particular attention to the international growth of the company.

In the Chapter IV, research findings are discussed. Also, answers to the three research questions are provided by matching the theory presented in Chapter I and the data presented in the Chapter III.

Final section concludes by providing interpretation of research findings and a summary of the whole research, followed by the research limitations.

Chapter I. Literature Review

International business has experienced several changes regarding its focus of analysis. In a first stage, Dunning (1958) and Vernon (1966) focused their studies on the competitive advantage of the nations at a country level by using trade statistics and foreign investment, being those outcomes later confirmed by Rugman (1980). Hymer (1960), the pioneer of the second stage, shifted the focus of analysis towards FDI within multinational enterprises (MNEs) and their exchange of firm specific advantages (FSAs) across countries. Later, scholars started to take into consideration the liability of foreignness, i.e. specific economic, cultural, geographic and institutional factors affecting the growth of MNEs (Rugman et al., 2011). In the third phase, the MNEs started to be viewed as a differentiated network, turning the MNEs subsidiaries and their managers into the focus of research. Birkinshaw (1996) stated that the synergies between both host and home country specific advantages and the FSAs possessed by the MNE could be an important source of competitive advantage for the latter. Overall, the core unit of analysis "*has shifted from the country-level, to the parent MNE, and now increasingly to the subsidiary level, often with a focus of the subsidiary's role in the internal MNE network*" (Rugman et al., 2011, p. 758).

1.1. Theories of international trade

Over the years, many scholars have developed different theories to better understand the mechanisms of international trade. Theories of international of trade played an important role in international business by influencing both the international competitive environment and the economic policy of many countries. Subsequently, each of the theories will be deeply analysed to understand the reasons behind the involvement of nations in international trade and to clarify the pattern of international trade within the global economy (Hill, 2009).

1.1.1. Mercantilism

Developed in the 16th century, Mercantilism is considered the first theory of international trade. The main assumption of Mercantilism was that "*gold and silver were the mainstays of national wealth and essential to vigorous commerce*." (Hill, 2009, p. 170). In other words, the mercantilists asserted that ownership of gold and silver was at the base of the power of nations. Since, at that time, both gold and silver were the currency of trade between nations, the objective of each country was to have a positive trade balance. By minimizing imports through tariffs and quotas and, maximizing exports through subsidies, a country would increase its national wealth by holding as much gold and silver as possible. In 1630, Tomas Mun, one of the exponents of this doctrine, wrote *"the ordinary means therefore to increase our wealth and treasure is by foreign trade, wherein we must observe this rule: sell more to strangers yearly than we consume of theirs in value"* (Hill, 2009, p. 170). Mercantilism views trade as zero-sum game where one country benefits from trade while another loses. Hill (2009, p. 171) stated that "*Unfortunately, the mercantilist theory is by no means dead"* and some scholars confirmed this statement by assuring that nations still implement neo-mercantilist policies, namely protectionism policies by trying to increase exports and limit imports.

1.1.2. Absolute Advantage theory

In 1776, Adam Smith challenged for the first time the Mercantilist theory and its claim of trade as being a zero-sum game (Hill, 2009). According to Smith, the ability to produce goods efficiently differs from country to country. Therefore, the concept of absolute advantage emerged, pointing out that a nation has an absolute advantage in the production of goods that it produces more efficiently than any other nation producing the same goods (Smit, 2010). According to Hill (2009), Smith believed that if a country has an absolute advantage in the production of some goods, it should specialise on the production of these goods. After the specialisation, countries should exchange those goods for other produced more efficiently in other countries. Overall, nations should never produce goods that it can buy cheaper abroad. As a result, every country benefits from trade and Smith proved that trade may be a positive-sum game (Hill, 2009). However, this theory ended up being a paradox in the way that *"a country that had absolute advantage in all products or services it produces would not import because it could produce more efficiently"* (Smit, 2010, p. 108).

1.1.3. Comparative Advantage theory

The above-mentioned paradox gave rise to the Comparative Advantage theory developed by David Ricardo where the author tried to improve Adam Smith's theory by raising the question - what happens if a country has an absolute advantage in the production of all goods? (Hill, 2009). Having in mind the Absolute Advantage theory, a country in such situation would not benefit from trading goods in the global market. According to Ricardo, countries should specialize in the production of goods for which they have a comparative advantage. In other words, countries should specialise in the production of goods that it produces more efficiently and should exchange them for products that it produces less efficiently, even if these are produced more efficiently than the trading partner (Smit, 2010). The key message of this theory is that *"potential world production is greater with unrestricted free trade than it is with restricted trade"* (Hill, 2009, p. 179). Overall, Ricardo tried to improve Smith's theory by suggesting that international trade may be a positive-sum game where all the countries involved have positive economic returns. This theory can also be viewed in terms of opportunity cost in the sense that a nation can have a comparative advantage in the production of goods that can be produced at a lower opportunity cost than other nation (Smit, 2010).

1.1.4. Heckscher-Ohlin (resource endowment) theory

Heckscher (1919) and Ohlin (1933) tried to complement Ricardo's theory by searching for the answer to the question - what are the causes for differences in comparative advantage between countries? - in order to fill the gap regarding the location of these advantages and, consequently explain the direction of trade (Smit, 2010). The Heckscher-Ohlin (resource endowment) theory emphasizes that comparative advantages emerge due to differences in national factor endowments and, since they differ from country to country, the costs of those factors are also different (Hill, 2009). Overall, by isolating factor endowment as the cause of comparative advantage, the theory suggests that nations should export products which use more intensively the factors that are more abundant - the more abundant the factor, the lower the cost - and import the ones that use intensively the factors that are rare and difficult to find within the nations. (Hill, 2009).

Over the years, many scholars tried to test the validity of Heckscher-Ohlin (resource endowment) theory. Leontief (1953) published a study where he stated that, due to the abundance of capital when comparing with other nations, it was expected for US to be an exporter of goods which require for their production large amounts of capital and an importer of labour intense goods. Surprisingly, the results confirmed just the opposite and it has become known as the Leontief Paradox which was the trigger for the development of alternative explanations for the Heckscher-Ohlin (resource endowment) theory.

1.1.5. The Product Life-Cycle theory

One of the alternative theories for the Heckscher-Ohlin theory was the Product Life Cycle theory proposed by Vernon (1966) when it has become clear that international trade was a complex process influenced by several factors and, consequently, it was difficult to explain international trade with a single theory. Product Life Cycle theory *"puts less emphasis upon comparative cost doctrine and more upon the timing of in-novation, the effects of scale economies, and the roles of ignorance and uncertainty in influencing trade patterns*" (Vernon, 1966, p. 190) and is based on the high percentage of world's new goods that were developed in the US and commercialized first in the US market. Vernon (1966) explained that the huge size of the US market and the high average income of US consumers were strong incentives to develop and produce new products in house, since the high unit labour costs function as an important stimulus to invest in cost-saving process technologies. The Product Life Cycle theory suggested that US firms developed and produced the goods first in the domestic market based on national locational considerations such as low levels of uncertainty and risks related with the introduction of the new product in the market or the inelastic demand that enabled firms to charge higher prices for new products (Hill, 2009). Moreover, Vernon (1966) stated that the initial demand for new products was not the same in the US and in other advanced economies because there was a significant initial demand in the US market, while in advanced countries the market was limited to a small share of high income consumers. Therefore, in a first stage, US firms start to export small portions of total production to those countries. In a second stage, as demand for new goods starts to increase in such advanced economies, local producers start to set up plants to serve their home markets while, at the same time, US companies might also establish production sites in those developed countries, thus limiting the US exports' potential. In a third stage, as the market starts to become mature, it is possible to observe the standardization of the products and consequently, the competitive advantage starts to be achieved through price competition. As a result, reducing production costs starts to be a priority for companies and, since less-developed countries may offer competitive advantages as a production location, US firms set production plants in those countries and then export back to US (Vernon, 1966). Overall, *"the locus of global production initially switches from the US to other advanced nations and then from those nations to developing countries."* (Hill, 2009, p. 184). The consequence of this this shift for the global trade pattern can be observed in Figure 1, where the initial position of the US as an exporter changes over time until the country becomes an importer.

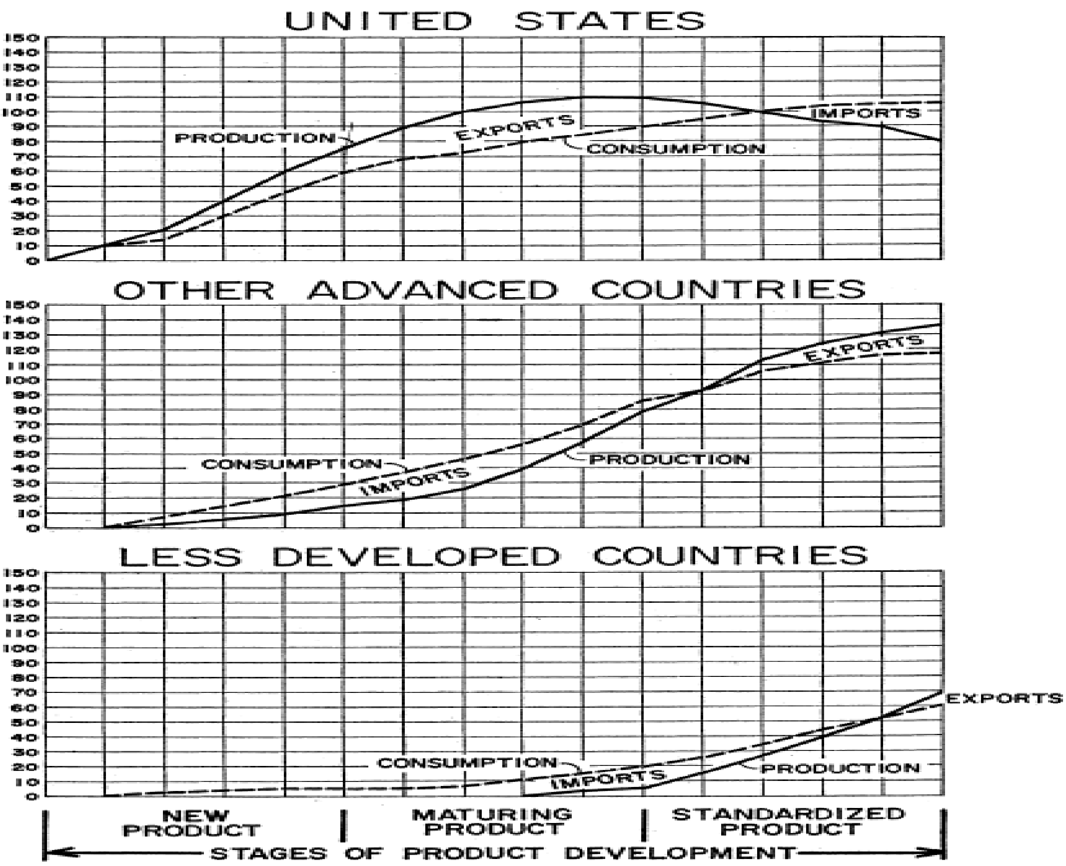

Figure 1: The Product Life Cycle theory
Source: Vernon (1966)

1.1.6. New Trade theory

Globalization of markets led to the simultaneous introduction of goods in the US and other advanced countries. Therefore, despite the Product Life Cycle theory might be valid to explain the pattern of global trade during the US economic supremacy, Vernon (1966) view that the biggest share of the new products is developed and introduced first in the US market seems to be limited in the contemporary world economy. In the 1970s, some authors started to suggest that economies of scale were a key factor in determining the pattern of international trade and, therefore a new theory was developed to *"explain the advantages of trade due to large scale production, cumulative experience, and transitory advantages resulting from innovation*" (Smit, 2010, p. 111). New Trade theory suggests that international trade can be mutually beneficial for nations even when there are no differences between them regarding to factor endowments or technologies (Krugman and Obstfeld, 2003). The first point of this theory emphasizes the important impact of economies of scale on international trade since through them, it is possible for a nation to increase the specialization of production within a sector and, consequently, increase the variety of goods available and decrease their average cost of production (Hill, 2009). In other words, in a world without trade, some nations with relatively small markets would not be able to produce some goods due to the difficulty in achieving economies of scale and, in the case of producing them without achieving economies of scale, the average cost of production would not be optimal. The second point of New Trade theory lies on the power of the first mover advantages and, consequently on the ability to attain economies of scale before any other competitors, leading to dominant positions in industries where the total output needed to achieve economies of scale represents a significant proportion of global demand (Hill, 2009). Overall, traditional trade theories and the New Trade theory share some common ground in the sense that competitive advantage arises from specialization. However, while in the former the specialization is a consequence of nation differences, in the latter the specialization is the result of increasing returns due to economies of scale and first mover advantages.

1.1.7. National Competitive Advantage of Nations

Disappointed with the previous theories on international trade, Porter (1990) developed a new theory named National Competitive Advantage where he tried to understand why some countries provide better foundations than others for companies to attain competitive advantages when competing internationally. In other words, the author was looking for the answer to the question - why do some countries win, and others lose in the global trade competition? According to Porter (1990, p. 73), "*National Prosperity is created, not inherited. It does not grow out of a country's natural endowments, its labour pool, its interests' rates or its currency's value, as classical economists insist.*". Therefore, firms outperform their competitors in the world market due to pressures and challenges, which are important drivers of innovation. As a result, the concepts of innovation and upgrading play an important role in Porter's theory because firms achieve competitive advantage through innovation and sustain it by upgrading it. Moreover, to provide the answer to the initial question, the scholar identified four different classes of country attributes which help to better explain the creation of national competitive advantages (Table 1), leading to the constitution of the Porter's Diamond (Figure 2).

Table 1: Definitions of the four attributes of Porter's Diamond

Attributes	**Definition**
Firms strategy, structure, and rivalry	• *"The conditions in the nation governing how companies are created, organized and managed, as well as the nature of domestic rivalry.";*

Demand conditions	• *"The nature of home-market demand for the industry's product or service.";*
Related and supporting industries	• *"The presence or absence in the nation of supplier industries and other related industries that are internationally competitive.";*
Factor endowments	• *"The nation's position in factors of production, such as skilled labour or infrastructure, necessary to compete in a given industry.".*

Source: Porter (1990, p. 78)

In addition to these factors, Porter (1990) decided to include "chance" and "government" policy in the model since they can have an important (exogenous) impact on each of the four components of the diamond by supporting and complementing the system.

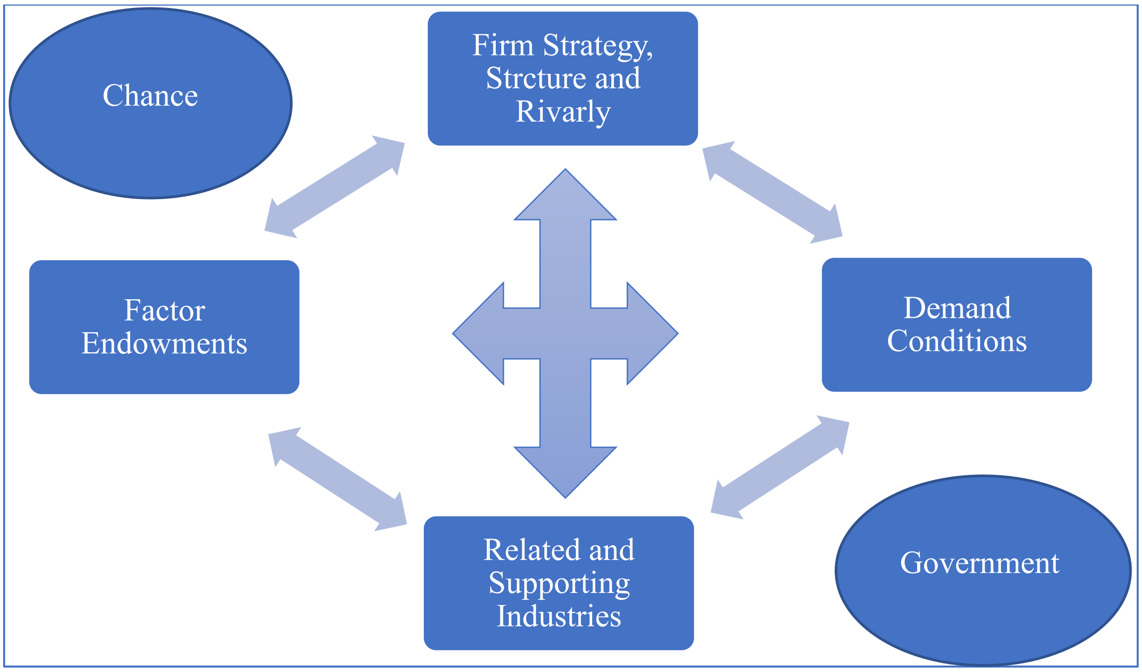

Figure 2: Determinants of national competitive advantage of nations: Porter's Diamond
Source: Adapted from Porter (1990)

As it possible to observe in the previous figure, there is a relationship of dependency among factors that explains the view of the "Diamond of National Advantage" as a mutually reinforced system where the impact of one attribute is often dependent on the state of others. Overall, Porter (1990) suggests that the success or failure of nations within specific industries in international competition is dependent on the combined effect of all the four attributes of the diamond - factor endowments, domestic demand, related and supporting industries and domestic rivalry - plus the influence of government and chance on each of the elements.

1.2.Foreign Direct Investment and Multinational Enterprise

Over the last 40 years, foreign direct investments (FDIs) have played an important role in the world economy despite the global efforts to decrease trade barriers. The growth of FDI can be explained by the political and economic changes affecting emerging nations and by the increasing number of protectionist governmental strategies , being FDI often employed to overcome such policies (Hill, 2009). FDI is commonly used by firms to expand their production outside national boundaries. According to Dunning and Lundan (2008, p.7), FDI *"involves the transfer of a package of assets or intermediate products, which includes financial capital, management and organizational expertise, technology, entrepreneurship, incentive structures, values and cultural norms, and access to markets across national boundaries."*. IMF (1993) suggests that firms engaging in FDI activity aim to achieve significant levels of control and influence on the management of the target company and, recommends at least a 10% stake to be considered FDI. In other words, FDI can be defined as investing in, controlling, and managing value added-activities in foreign countries, holding the firm a minimum of 10% equity stake in the foreign firm. Other foreign investments, involving only the transfer of financial capital, and excluding the control over operations, are considered foreign portfolio (indirect) investment (FPI). In turn, MNEs are firms that engage in FDI and, possess or control value-added activities in multiple countries (Dunning and Lundan, 2008). On the "Foreign Entry Modes" sub-chapter, the two major forms of FDI – greenfield investment and acquisition - will be analysed in detail.

The relationship between FDI and economic development is a complex phenomenon since some authors highlighted a positive correlation between both concepts (Blomstrom et al., 1994; Borensztein et al., 1998; Caves and Caves, 1996; Smarzynska, 2002), while others suggested there is not a significant impact of FDI on economic development (Hanson, 2001; Hirschman, 1958). Therefore, although several authors tried to explain the topic of FDI, there is not a single theory that is generally accepted within the international business research. Ricardo was the first author trying to explain FDI when he developed the Comparative Advantage theory, being, however, unable to provide the answers for the global rise of the FDI. According to Hosseini (2005), after Ricardo's failed attempt, several new theories emerged and, although more comprehensive, those new theories did not provide enough knowledge regarding FDI. Bellow, the main FDI theories will be presented.

1.2.1. The Product Life Cycle theory and foreign direct investments

The Product Life Cycle theory developed by Vernon (1966) and described in the previous chapter can also be used to understand FDI. The author suggested that firms benefiting from pioneering advantages in their domestic market often became multinationals and engage in FDI activity to produce their goods in foreign countries. Vernon (1966) presented a model in which firms enter in foreign markets through FDI at a specific stage in the life cycle of the product they introduced in the home market. According to the theory, firms undertake FDI in developed economies when the demand in those host countries is high enough to underpin local production. Moreover, once the market in such advanced economies becomes saturated, firms shift their FDI to developing economies aiming to reduce costs to be price competitive within the global market. However, the Product Life Cycle theory does not explain what are the benefits associated with the choice of engaging in FDI in a host country rather than exporting from the home country or licensing the product to a foreign firm (Hill, 2009). The statement that the size of the market is large enough to make local production sustainable is not completely accurate, since it could be more beneficial to have the production concentrated in one single site to take advantage of economies of scale and, therefore *"the theory's failure to identify when it is profitable to invest abroad limits its explanatory power and its usefulness to business"* (Hill, 2009, p. 252).

1.2.2. The Internalisation theory

The Internalisation theory was developed by Buckley and Casson (1976) and later by Rugman (1981) and Hennart (1982) with the aim of understanding the rise of MNEs and their motivations to engage in FDI activity rather than licensing or any other non-FDI strategy as a foreign market entry mode. This theory was strongly influenced by Coase (1937), who studied internalisation at a national level and by Hymer (1960), who considered internalisation at an international level. According to Buckley and Casson (2016, p. 45), *"the link between the internalisation of markets and the existence of MNE's is very simple: an MNE is created whenever markets are internalised across national boundaries."*. This approach focuses on firms' efficiency, more specifically on the firms' ability to reduce transaction costs by internalizing activities – mostly knowledge-based – within different locations (Buckley and Casson, 1976). The main idea of the Internalisation theory is that firms internalise markets for intangible assets across national boundaries to increase profitability and to overcome market imperfections such as expropriation of valuable technological knowledge by potential foreign competitors, information asymmetries affecting buyer-seller relationships and trade barriers created by governments (Rugman, 1981). Therefore, *"the internalization of the market across national boundaries de facto generates an MNE"* (Rugman et al., 2011, p. 759).

1.2.3. The Eclectic Paradigm

The Internalisation theory was also included in the Eclectic Paradigm – the theory developed by Dunning (1977, 1980, 1988, 1998, 2000, 2001) and Dunning and Lundan (2008) and triggered by these authors' desire to answer questions related to the motives of conducting FDIs, to the choice of FDI locations and to the factors affecting the amount and composition of FDI (Dunning, 1973). However, since internalisation theory only explains a portion of the FDI flows, the major objective of the Eclectic Paradigm was to include all the relevant factors affecting the decision of firms to undertake FDI and, consequently, have a significant impact on their growth as MNE (Dunning and Lundan, 2008). The main assumption of this framework, named O-L-I Paradigm, is that the pattern of FDI is influenced by three different types of advantages: Ownership Advantages (O), Location Advantages (L) and Internalization Advantages (I) (Dunning, 1977, 1988, 2000). Bellow, Table 2 provides the explanation for each of the OLI advantages.

Table 2: Summary of the meaning of OLI advantages

Types of Advantages	Definitions
Ownership Advantages (O)	• Unique competitive advantages based on valuable intangible assets possessed by firms that can be easily transferred across borders due to their low transaction costs;
Location Advantages (L)	• Foreign countries-specific advantages including resource endowment, favourable demand conditions, and advantageous political and legal systems;
Internalization Advantages (I)	• Advantages associated with the creation, exploitation and recombination of firms-specific advantages to control value added activities and overcome the obstacles posed by market imperfections.

Source: Own elaboration based on Dunning (1977, 1980, 1988, 1998, 2000, 2001); Dunning and Lundan (2008)

Moreover, the Eclectic Paradigm states that the impact of the three OLI parameters on firms and the reaction of firms to those parameters is strongly context-dependent, often reflecting the economic, political and social situation of both home and host countries. Consequently, the pattern and direction of FDI is influenced by the characteristics of different nations and, by the nature of the industries in which firms operate as well as the objectives and strategies of firms (Dunning, 2000).

1.3.Foreign Market Entry Modes

Every company considering international expansion takes into account three different decisions: the decision on which foreign markets to enter, the timing of the entry on these foreign markets and the commitment to these foreign markets (Hill, 2009). After analysing the previous elements, the next logical step is to think about which foreign entry mode to use.

Over the years, several authors have studied how firms choose to enter and operate in foreign countries, therefore different researchers proposed multiple definitions of foreign market entry modes. Johanson and Wiedersheim-Paul (1975, p. 306) referred to entry modes as an establishment chain and defined it as *"the development of operations in individual countries"*. Later, Root (1987) considered entry modes as being an arrangement which enables the entrance in a foreign market of a firm's products, human resources, technologic know-how and managerial skills. A broader view of the concept was suggested by Hill et al. (1990, p. 117) when the scholars defined entry modes as the way of *"organizing its foreign business activities"*. More recently, and based on previous literature, Sharma and Erramilli (2004) described entry modes as an arrangement in which a company can develop a business strategy in a foreign market by implementing solely the marketing activities or, by establishing both production and marketing activities on its own or even by working together with a local partner through a partnership.

Different authors adopted different criteria to define entry modes. For the purpose of this thesis, I chose the hierarchical model introduced first by Kumar and Subramanian (1997) and, then adapted by Pan and David (2000) where entry modes are divided into non-equity modes and equity modes as the following Figure 3 illustrates.

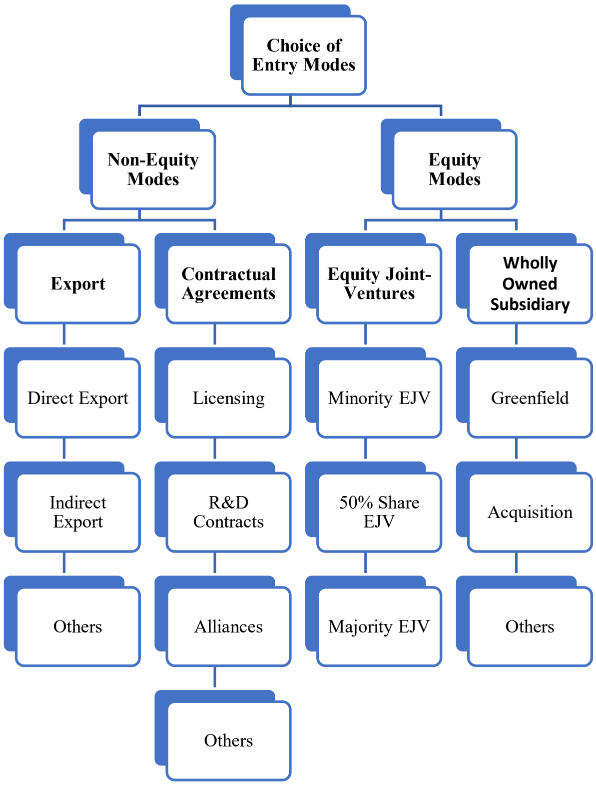

Figure 3: Hierarchical model of entry choice
Source: Adapted from Pan and David (2000)

As the figure shows, there is an extensive array of choices of entry modes in foreign markets. Wind and Perlmutter (1977) described entry modes as a frontier issue in global marketing, highlighting the significant influence of entry modes on the success of the international strategy of a firm. Shortly, there is not an optimal entry mode, every decision is connected with distinct degrees of risk and reward since each of the options has a mix of advantages and drawbacks influenced by several factors, namely transportation costs, trade barriers, political issues or economic risks (Hill, 2009). Thereafter, each of the entry modes in foreign markets will be deeply analysed, along with the respective advantages and disadvantages.

1.3.1. Export

Exporting is the most frequent and simple mode to engage in international business activity (Griffin and Pustay, 2012) and, it is associated with the physical transfer of business outputs to a foreign market with or without the help of an intermediary in return for the monetary value of the business outputs (Kumar and Subramanian, 1997). There are two major forms of exporting: direct exporting and indirect exporting. According to Albaum and Duerr (2008) and Hollensen (2008), the first one takes place when a firm sells output units directly to an independent intermediary located in the host country , whereas the latter occurs when a firm sells output units to an independent domestic customer, which afterwards exports them to the host country.

Regarding direct export, the independent intermediary can be either an agent or a distributor. Despite being commonly cited as synonyms, there are several differences between both concepts. Agents and distributors are independent companies that are responsible to represent the manufacturer company and to sell its products, however, while an agent makes profit by charging a pre-defined commission fee to the manufacturer, the distributor purchases the product from the manufacturer, stocks it and makes profit by setting independent terms of sales and consequently, by selling the product to clients (Albaum and Duerr, 2008; Hollensen, 2008). In other words, the major duty of agents is to find clients for the manufacturer and to sell their products in the host country, receiving a commission based on the sales performance, whereas the role of the distributors goes one step further through the purchasing of the goods from the manufacturer based on their own forecasts, followed by the stock of those products and by the setting of independent conditions of sales, including the promotion and the selling price.

In its turn, firms using indirect exporting are not directly involved in the international activity since they rely on experienced independent export organizations located within their own nations to sell their products abroad, thus enabling them to expand internationally with a low degree of commitment (Albaum and Duerr, 2008; Hollensen, 2008).

Griffin and Pustay (2012) identified two different motivations for firms to start exporting: proactive motivations and reactive motivations. According to previous researches, large firms tend to be proactive (Hill, 2009), meaning that opportunities available in a foreign market pull firms into that market (Griffin and Pustay, 2012). In contrast, small and medium size firms are prone to be reactive, namely they patiently wait for the international opportunities to come to them, instead of being actively looking for new opportunities in the global market (Hill, 2009). Therefore, firms are pushed into foreign markets due to both decreasing opportunities in the home country and the saturation of the domestic market (Griffin and Pustay, 2012).

Exporting enables firms to benefit from several advantages. Firstly, by exporting firms have the possibility to have a controlled financial exposure since it prevents them to incur establishment costs regarding production facilities in the host country (Griffin and Pustay, 2012). Secondly, it allows firms to gradually enter the market, and consequently benefit from the experience curve and location advantages (Hill, 2009). Thirdly, apart from those two main advantages, exporting can be the solution to overcome barriers to foreign investment imposed by the host countries (Griffin and Pustay, 2012). Finally, when exporting through agents or distributors, firms benefit from their local market knowledge legislation and networks (Albaum and Duerr, 2008; Hollensen, 2008).

Regardless of its advantages, exporting has also a few disadvantages. According to Hill (2009), high transportation costs constitute a significant barrier to exports, especially for goods sold to bulk buyers, leading to logistical complexities that are difficult to surpass (Griffin and Pustay, 2012). Moreover, tariff barriers, legislative and bureaucratic restrictions and problems with local distributors can turn exporting into a worthless and risky operation. (Hill, 2009).

1.3.2. Contractual agreements

A contractual agreement is another example of a non-equity foreign entry mode. Shortly, it is a contract between two parties, namely one firm and one agent, being the latter responsible for the production and distribution of the goods in the foreign market in exchange for some economic compensation in form of rents (Kumar and Subramanian, 1997).

The most common types of contractual agreements are licensing, franchising and alliances. Licensing is commonly used as a foreign entry mode choice when firms want to avoid the risks associated with FDI, since it allows them to exploit their mobile resources abroad (Mottner and Johnson, 2000) without having significant out-of-pocket costs as development costs are already incurred (Griffin and Pustay, 2012).

When licensing started to be object of research, authors used to refer to the concept as a synonym of manufacturing technological transfer (Telesio, 1979). However, the increasing importance of information technology led to a shift on the focus towards issues of intellectual property rights (Mottner and Johnson, 2000). Therefore, Hill (2009) defined a licensing agreement as a contract where a licensee is obliged to pay a royalty fee to a licensor for a specified interval of time in exchange of being granted with intangible property rights in the form of patents, copyrights, trademarks, work methods, processes or formulas. According to Griffin and Pustay (2012), royalties of 3-5% of sales are commonly used, while flat fees or fixed amount per unit sold are also considered as alternative compensations.

The main advantage of licensing is that the firm does not have to heavily invest in an early stage of the transition to a new market, avoiding both risks and development costs related with the expansion (Hill, 2009). It also allows the licensor to gradually learn about the foreign market, taking advantage of the licensee know-how regarding the foreign market, without making substantial financial and managerial commitment (Griffin and Pustay, 2012). Additionally, Hill (2009) stated that licensing can be an important instrument to overcome investment barriers present in several foreign markets.

Regarding the drawbacks of licensing, Hill (2009) highlighted the lack of control over the manufacturing process, marketing activities and overall strategy, making it difficult to realize experience curve economies. Another relevant problem is associated with the lack of control over technology, and subsequently expropriation of technological know-how, leading to the loss of the competitive advantage and compromising the long term strategy of the firm (Hill, 2009).

Another frequent strategy to enter in a foreign market is franchising, basically a special form of licensing where the franchisor besides selling intangible property to the franchisee, agrees that the franchisee has to comply with rigid rules regarding how to run the business (Hill, 2009). Both entry modes are identical, the difference lies on the higher degree of long term commitment of the former and on the type of firms utilizing each strategy because, while international licensing is mostly chosen by manufacturing firms, international franchising is primarily used by service firms. (Hill, 2009).

The advantages of franchising are closely related with those of licensing. The risks and costs associated with the expansion to a foreign market are relatively low and firms can establish their operations abroad in a short period of time (Hill, 2009). Plus, firms can easily obtain important information regarding the foreign market and have the possibility to learn key lessons that can be applied to additional countries (Griffin and Pustay, 2012).

The negative effects of franchising are less visible than in licensing. However, the lack of control over operations and technology are still a subject of concern within this entry mode strategy. This being said, the most significant problem of international franchising is quality control, since people can face quality issues in one country and extrapolate these drawbacks to other countries, decreasing the firm's global reputation (Hill, 2009).

Finally, some firms opt to enter in foreign markets via alliances. As licensing or franchising, alliances are non-equity entry modes and refer to arrangements between competing firms where they cooperate to take advantage of potential synergies (Hill, 2009).

Alliances allow firms to benefit from the knowledge and expertise of local partners who better understand the foreign business environment and have important connections within their networks (Griffin and Pustay, 2012). Another advantage of forming alliances is that they enable firms to share fixed costs and related risks and, at the same time, to benefit from complementary know-how and resources that would be difficult to develop individually (Hill, 2009).

According to Hill (2009), alliances can also be dangerous and, sometimes firms lose more than they receive in the way competitors can have access to important information regarding technologies and markets, which can be used later to build competitive advantage, leading often to the end of the partner activity in the foreign market.

1.3.3. Equity joint ventures

Being the international expansion an expensive and complex process, several firms search for partnerships with other companies in order to benefit from their skills and know-how regarding the foreign market and, as a consequence work together to achieve competitive advantages (Griffin and Pustay, 2012). Equity joint venture is a business agreement entailing the creation of a separate business entity by two or more independent firms, where they own the new firm to some extent and share related business risks (Harrigan, 1988). The most common type of equity ownership level, according to Hill (2009), is 50/50, in which there are two parties, each holding 50% percent of the total ownership stake. Moreover, there are joint ventures in which some firms have more than 50% of total stake, and consequently have a majority share and higher control, while there are others where firms own less than 50% of total stake, thus possessing a minority share and not having a tight control over the business (Hill, 2009).

Establishing a joint venture presents several advantages. To begin, firms benefit from local partner's know-how and expertise regarding the competitive environment in the host country (Hill, 2009). Additionally, the partner firm can help to overcome major problems such as strict government regulations, that force MNEs to work together with a local firm (Griffin and Pustay, 2012). Another clear advantage, according to Hill (2009), arises from sharing costs and risks with a local partner regarding the entry in a new market, being this especially important in intense competitive environments that lead to high levels of uncertainty and instability.

Despite the above-mentioned advantages, joint ventures have major pitfalls. As in the case of licensing, problems of managerial opportunism are still common and some firms risk giving access to important technology to its partners (Hill, 2009). Another drawback is related with the loss of autonomy and changing circumstances (Griffin and Pustay, 2012) that lead to strategic asymmetries, resulting in conflicts between firms when their objective and priorities collide (Hill, 2009).

1.3.4. Wholly owned subsidiaries

Another possibility to enter in a foreign market is through wholly owned subsidiaries, which together with equity joint ventures are the most common equity entry modes. In a wholly owned subsidiary, the firm possess 100% of the stock and it can be realized either by establishing a greenfield venture in the foreign market or by acquiring a firm already present in the target market - acquisition (Hill, 2009).

Establishing a greenfield venture involves a significant start-up investment to build a new subsidiary in a foreign market from the scratch (Kumar and Subramanian, 1997). The major advantage of this type of entry mode is that it enables the firm to set, from the beginning, its own corporate culture and its own operating process, reducing the risks and costs associated with the transfer of such important drivers of competitive advantage (Hill, 2009). Another advantage of the greenfield strategy arises from the great economic impact that this entry mode has on the chosen market, leading governments to provide incentives to the development of ground up facilities and consequently, to the decrease of the firm's costs (Griffin and Pustay, 2012).

Despite the above-mentioned advantages, setting up a greenfield venture has its drawbacks. The most significant disadvantages of the greenfield strategy is that it takes time to implement (Hill, 2009) and, it may be difficult to comply with hostile national regulations regarding facilities' construction and the hiring and training of local workforce (Griffin and Pustay, 2012).

An alternative method to establish a wholly owned subsidiary in a foreign country is through the acquisition of an existing firm in the target market by issuing stock in a sufficient quantity to exercise control over the acquired firm (Kumar and Subramanian, 1997). Acquisitions have one important point in their favour as they enable firms to quickly have access and build their presence in the foreign market, since they acquire a wide range of valuable already established assets such as facilities, employees, technologies, brand names, logistics systems or distribution networks, thus reducing the uncertainty associated with the expansion to a new market (Hill, 2009).

According to several studies conducted by reputed companies such as Mercer Management Consulting, KPMG, McKenzie and Co., Ravenscraft or Sherer's, acquisitions often destroy rather than create added value for shareholders (Hill, 2009). These failures occur for numerous reasons. The inability of the top managers to proper estimate the value of the acquisition leads to the overpayment for the resources of the acquired firm – *hubris hypothesis*

(Hill, 2009). Another frequent problems regarding acquisitions arise from differences between the corporate culture of the firms and from the lack of an adequate due diligence during the pre-acquisition phase, often resulting in extra costs for the firms to fix those issues and their associated problems (Hill, 2009).

Bellow, the Table 3 provides a summary regarding the pros and cons associated with the different entry modes considered in this research.

Table 3: Summary of the advantages and disadvantages of the considered entry modes

Mode	Advantages	Disadvantages
Exporting	• Controlled financial exposure; • Gradual commitment: experience curve and location economies; • Solution to overcome barriers to foreign investment.	• Uneconomical when transportation costs are high; • Logistical difficulties; • Vulnerability to tariff barriers and legal restrictions; • Potential frictions with local distributors.
Licensing	• Low financial risks and development cost; • Gradual learning about the market without substantial commitment; • Solution to overcome barriers to foreign investment.	• High degree of dependence; • Inability to achieve experience curve advantages. • Quality and production risks; • Lack of control over technology: risk of creating future competitor.
Franchising	• Low financial risks and development cost; • Gradual learning about the market without substantial commitment; • Solution to overcome barriers to foreign investment. • Key lessons learned to apply in other countries.	• High degree of dependence; • Inability to achieve experience curve advantages. • Quality and production risks; • Lack of control over technology: risk of creating future competitor; • Potential decline in the global reputation due to the extrapolation of quality problems.
Alliance	• Access to local partner's knowledge and expertise; • Sharing risks and costs with the local partner related with the entry in a new market; • Benefits from complementary know-how and resources.	• Lack of control over technology: risk of creating future competitor.
Equity joint venture	• Access to local partner's knowledge and expertise; • Solution to overcome hostile government regulations; • Sharing risks and costs with the local partner related with the entry in a new market.	• Lack of control over technology: risk of creating future competitor; • Loss of autonomy and changing circumstances: risk of strategic asymmetries.

Greenfield venture	• Ability to set from the beginning firm's corporate culture and operating processes; • Local government incentives.	• Slow establishment; • Difficulty to comply with hostile national government regulations.
Acquisition	• Quick access to the foreign market; • Ability to build a strong presence in the market from the beginning.	• Hubris Hypothesis problem; • Clash between corporate cultures of the acquiring and the acquired firms.

Source: Adapted from Griffin and Pustay (2012)

1.4.Internationalization Process

Many authors believe that firms' internationalization process is a complex activity where companies progressively increase their international presence as a result of a sequence of incremental strategic choices. (Johanson and Vahlne, 1977). In other words, according to this view, internationalization is the outcome of well-planned decisions that leads to an increase in the companies' business activities outside their domestic market. This dynamic approach was also shared by Welch and Luostarinen (1988, p. 36) that suggested that internationalization *"is the process of increasing involvement in international operations."*. Later, Calof and Beamish (1995) also referred to internationalization as an evolutionary process where firms adjust their decisions, operations and resources to the global market as they acquire experience, being this is a more general view of the concept.

Mathews (2006) reformulated the definition of internationalization as a system of firm's relationships with the existing networks of the international environment. According to the author, firms increase their involvement in the global economy through multiple linkages, turning internationalization into "*the process of the firm's becoming integrated in international economic activities."*. (Mathews, 2006, p. 16). This network view was also shared by Vahlne and Johanson (2013) that redefined internationalization as a process where firms take advantage of opportunities resulting from interdependent relationships and dynamic interactions.

The next two subchapters will be dedicated to the analysis of two different internationalization approaches: the Uppsala model and the *born global* phenomenon.

1.4.1. Uppsala model

The Uppsala model was introduced by Johanson and Vahlne (1977) and it was developed from empirical research on the international expansion of Swedish companies which, during that time, was observed to proceed in an incremental way, rather than by heavily investing in foreign production facilities at specific periods in time (Johanson and Vahlne, 1977).

The Uppsala model *"focuses on the gradual acquisition, integration and use of knowledge about foreign markets and operations, and on increasing commitments to foreign markets."* (Johanson and Vahlne, 1977, p. 23). In other words, their model describes the internationalization of firms as a slow and gradual process where they progressively increase both knowledge and commitment to overseas markets.

The authors identified a pattern regarding the establishment of operations in foreign markets, named - establishment of chain - where it was commonly observed the steady evolution from the elementary export activity to the complex operation of setting up production sites abroad. According to Johanson and Vahlne (1977), the concept of psychic distance, which is defined as the set of elements that can affect the way information flows across markets, is connected with the sequential pattern of internationalization in the sense that factors such as the lack of information about the market or uncertainty have an important impact on strategic decisions. Therefore, firms start to expand to markets that are similar to the domestic market and then, they start to enter markets with a higher psychic distance. Overall, it is possible to observe a triangular relationship between psychic distance, the pattern of international expansion and the foreign entry modes as *"firms start exporting to a country via an agent, later establish a sales subsidiary, and eventually, in some cases, begin production in the host country."*. (Johanson and Vahlne, 1977, p. 24).

The traditional view of the Uppsala model has more than 40 years and, of course, much has changed since that time. Over this period, there were important changes in the economic and regulatory system, changes in the behaviour of the firms and, also new concepts and ideas came into view. For those reasons, many scholars conducted new research and, in 2009, the authors of the original model revisited it.

The internationalization model is still considered to be dynamic because the outcome of one decision constitutes the input of the next decision. However, the main difference between the original and the revised model lies on the reasons behind uncertainty since in today's world the concept of – outsidership - with respect to important networks seems to have a higher impact on the process rather than the concept of - psychic distance – since, *"companies and individuals have acquired more general knowledge of foreign environments, and perhaps this instils in them greater confidence in their ability to cope with psychic distance."* (Johanson and Vahlne, 2009, p. 1421).

In the original model, the focus lies on the accumulated knowledge in operations in foreign countries and on the commitment decisions that enable firms to strength their positions abroad (Johanson and Vahlne, 1977). However, during the 1990s, several authors developed theories about the role of networks in the internationalization strategy of firms, having highlighted their influence both on the pattern of expansion and on the foreign market selection (Chen and Chen, 1998; Chetty and Holm, 2000; Coviello and Munro, 1997; Coviello and Munro, 1995; Elango and Pattnaik, 2007; Ellis, 2000; Loane and Bell, 2006; Martin et al., 1998; Welch and Welch, 1996). Therefore, the core unit of analysis of the new model are business networks and their effects in the internationalization of firms (Johanson and Vahlne, 2009).

As shown in the Figure 4 bellow, the model is composed by two distinct elements - Stage and State aspects of the internationalization - each of them subsequently divided into two more variables. According to the authors, the model is considered dynamic since the different elements establish interdependent relationships where they have a significant impact on each other's. Bellow, it is possible to observe the evolution of the Uppsala model from the basic mechanism of internationalization (Johanson and Vahlne, 1977) to the business network internationalization process model (Johanson and Vahlne, 2009).

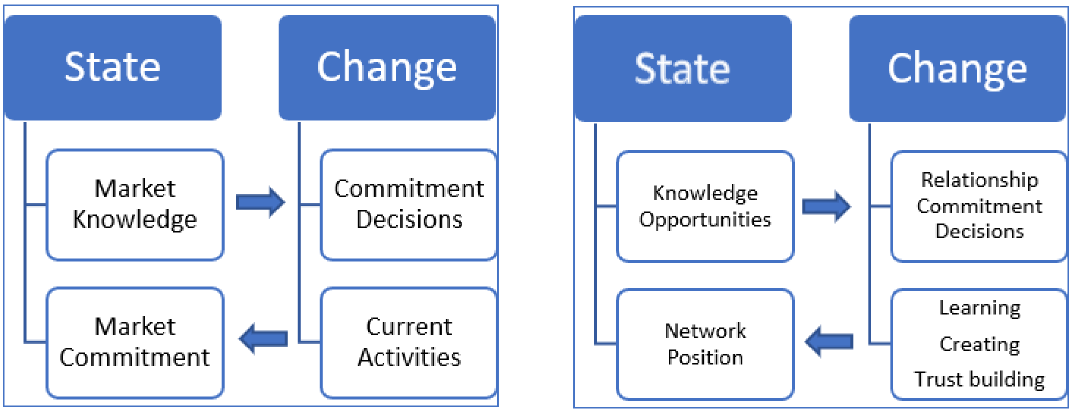

Figure 4: Evolution from "The basic mechanism of internationalization" to "The business network internationalization process model (2009 version)"
Source: Adapted from Johanson and Vahlne (2009)

The above figure shows that the main structure of the model did not change from the original to the revised model. However, the scholars have slightly modified some of the aspects included in the system. Regarding the state aspects - Market Knowledge - was substituted for - Knowledge Opportunities - while the original model assumes that the knowledge acquired in any experiential way is fundamental to the learning process (Johanson and Vahlne, 1977), the updated version suggests that the process of identifying and exploiting opportunities is strongly linked to learning and commitment (Johanson and Vahlne, 2009). The concept of opportunities was added because, according to the authors, they *"are the most important element of the body of knowledge that drives the process"* (Johanson and Vahlne, 2009, p. 1424). Moreover, the variable "Market Commitment" was replaced by "Network Position", since both scholars believe that "Market Commitment" had a limited scope and, the new model suggests that international expansion evolves within a complex network where relationships have different degrees of compromise, trust and information (Johanson and Vahlne, 2009).

Regarding the change aspects, the construct of "Commitment Decisions" was transformed into "Relationship Commitment Decisions" to *"clarify that commitment is to relationships or to networks of relationships"* (Johanson and Vahlne, 2009, p. 1424) Moreover, the concept of "Current Activities" became "Learning, Creating and Trust-building" to clarify the consequences of current activities, namely increasing know-how, reliability and compromise. In the new model, despite experiential learning continues to play a major role within all types of learning, since the network view was added, the *"use of the term learning is at higher level of abstraction: that is, we think of it as more than experimental learning"*. (Johanson and Vahlne, 2009, p. 1424). The variable - Trust Building - was added because the authors wanted to highlight the affective aspect of the network view, while – Creation - was included to emphasise opportunity creation which is considered by the scholars as being a crucial element of relationships (Johanson and Vahlne, 2009).

Overall, the traditional model where firms expand to foreign markets by surpassing several obstacles is losing relevance since, presently, the most important aspect of the internationalization process of firms is the consolidation of their positions within the network. To sum up, all the above-mentioned elements are interconnected: knowledge is acquired through the firms' current network position; this knowledge is crucial to identify, and exploit opportunities related with relationship commitment decisions; those decisions are the fundament for learning, creating and trust-building that will, in turn, create a new position within the network.

1.4.2. Born global phenomenon

The Uppsala model was challenged by many authors. The belief evolved that firm's international behaviour had change due to modifications in the international environment since the introduction of the model in 1977 (Johanson and Vahlne, 2009). Example of this evolution is the way how some firms expand abroad (Oviatt and McDougall, 1994). Specifically, that the time needed for more and more firms to establish themselves in the international market has decreased significantly (Zahra et al., 2000) or, that psychic distance has become not any longer connected vital for the firm internationalization (Madsen and Servais, 1997).

As mentioned above, opposed to the Uppsala model, new ventures start with a proactive international strategy since their inception – these firms are called *born global* and they have shifted the core unit of business activity (Rennie, 1993). During the years, this phenomenon has also been referred to as global start-ups (Oviatt and McDougall, 1994), international new ventures (McDougall et al., 1994), high technology start-ups (Jolly et al., 1992) or instant internationals (McAuley, 1999) that have grown in numbers due changes in the international marketplace (Andersson and Wictor, 2003). According to Oviatt and McDougall (1994), until the beginnings of 1990s, this type of firms has been almost ignored by the academics as the following Figure 5 demonstrates.

		Geographic Scope	
Organization Age		Domestic	International
	New		
	Established		

→ Significant amounts of literature

Figure 5: The domain of academic literature on organizations until the beginning of 1990s
Source: Adapted from Oviatt and McDougall (1994)

By analysing the figure, it is possible to observe that, during the beginning of the 1990s, there was a significant amount of literature regarding both new and established firms operating on their domestic markets as well as regarding established firms already engaged in the international activity. On the other hand, as the white portion of the figure suggests, there was not a significant number of research studies regarding new firms with early foreign expansion within their short lifetime until this period.

The question of - How did *born globals* emerge? - led to an increasing number of studies concerning this issue and, over the last two decades several authors tried to explain the emergence of these firms. Globalisation and, subsequently the decrease in the trade barriers and in the costs of communication and transportation were the main drivers of the rise of *born global* firms. (Andersson and Wictor, 2003). According to Rennie (1993), the reasons behind this shift on the internationalization pattern are connected with the interdependent relationship of dynamics of customer choices, manufacturing processes and information technologies (IT), which together led to a re-shape of the competitive environment. In its turn, Porter (1990) linked economic, technologic and social changes to an increase in the effectiveness of communication and transportation and, consequently, to a decrease of the costs of participating in the global market that made it easier to conduct international business. Knight and Cavusgil (2004) highlighted the importance of internet and its complementary technologies on turning the internationalization process into a feasible and cost-effective business strategy. The homogenization of the consumers' preferences within the international market, regardless of the distance between nations (Hedlund and Kverneland, 1985), together with the growing number of financing opportunities in international markets (Patricof, 1989; Valeriano, 1991) and the increasing ability of individuals to move from one place to another (Johnston, 1991; Reich, 1991) also contributed for the emergence of rapid internationalization of new ventures.

Moreover, Madsen and Servais (1997) identified three interdependent factors that help to understand the rise of *born global* firms - new market environment, technological improvements in production, transportation and communication and more capable people, particularly the founder of the *born global* firm. Regarding the new market environment, the authors pointed out the increasing tendency towards specialisation and subsequently, the emergence of a significant number of niche markets (Madsen and Servais, 1997). Plus, the advancements in production techniques turned small scale operations into a cost-effective process and, together with the technological improvements within transportation and communication activities made the world market available for almost every firm. Finally, they linked the growing potential of individuals to take advantages of the market opportunities related to technological changes as a result of the growing international experience of the founders. Andersson and Wictor (2003) reinforced the important role of the entrepreneurs as they perceive opportunities and challenges where others see problems, having always their mindset directed towards a global strategy.

Knight and Cavusgil (2004) shared some of the beliefs regarding the emergence of *born global* firms with Madsen and Servais (1997) as they identified globalization and technological advancements as the two main drivers of *born global* firms. However, the scholars suggested that, *per se*, both are not strong enough to explain the entrance of *born global* firms in the international marketplace. The concept of organizational capabilities, meaning the ability of a firm to create value through the transformation of inputs into outputs by performing frequently the same productive tasks (Nelson and Winter, 1982; Teece and Pisano, 1994), is crucial to understand the growing number of *born global* firms. According to Knight and Cavusgil (2004), organizational capabilities are a key driver of *born global* firms, where international entrepreneurial orientation and international marketing orientation play an important role to pursuit the opportunities that the complex global market has to offer. Firms with superior organizational capabilities are better prepared to deal with the uncertainty of the world market (Oviatt and McDougall, 1994) and, the ability of such firms to replicate those capabilities in several markets is the foundation of *born global* firms' competitive advantage (Knight and Cavusgil, 2004). As discussed in literature, young age and smallness of *born global* firms allow them to be more flexible and, as result, to have optimal conditions to innovate (Lewin and Massini, 2003; Penrose, 1959; Schumpeter, 1942) The adaptability of these firms is reinforced by the strong relationships with foreign intermediaries, helping them to overcome issues regarding specific market knowledge (Knight and Cavusgil, 2004). Shortly, the authors believe that both innovation and entrepreneurial culture help to promote the acquisition of intangible knowledge and the development of capabilities that help to explain the international success of *born global* firms.

Sharma and Blomstermo (2003) noted that the foreign market entry modes chosen by *born global* firms may differ from company to company, which usually adapt the new market entry strategy to specific needs of the market and clients. However, due to limited financial resources, *born global* firms tend to rely on low commitment entry modes (Aspelund et al., 2007; Rialp et al., 2005), being exporting the most common foreign entry mode used by *born global* firms (Knight and Cavusgil, 2015). Therefore, this type of firms consider individually each foreign market entry opportunity, allowing enhanced flexibility for future international expansion since the internationalization process of *born global* firms is driven by the know-how provided by their network links (Sharma and Blomstermo, 2003). Moreover, there is not a fixed pattern to be pursued when selecting a new market, turning the internationalization process into an operation of *"improvisation and trial and error."* (Sharma and Blomstermo, 2003, p. 748). Shortly, the international expansion strategy of *born global* firms can be described as an exploration process (March, 1991) where entrepreneurs perceive an opportunity and they take it, engaging in an unstructured responsive approach to the international market (McAuley, 1999).

Regarding the definition of *born global* firms, there has been a wide range of different interpretations of the concept within the literature over the last 25 years. The term - *born global* firms - was introduced by Rennie (1993) in a research conducted by McKenzie regarding the success of small and medium sized Australian exporting firms. According to Rennie (1993), sales abroad constituted 75% of their total revenues and, they began their export activity after two years of existence. Based on Rennie (1993), these early internationalising firms were also referred to international new ventures in an article written by Oviatt and McDougall (1994) where the authors highlighted that those firms can successfully compete in international markets with a proactive strategy despite their limited resources. The scholars defined this type of companies as firms that, from their foundation, strive to achieve competitive advantage through the exploitation of resources and the sale of output units in more than one country. In turn, Knight (1997) added a quantitative element to the previous definition of *born global* firms, suggesting that they achieve relation of foreign sales to total sales (FSTS ratio) of at least 25% within three years after their birth and, that they pursue competitive advantage through the use of resources and the sales of output in several foreign countries. This operationalisation of the concept has been widely used in several studies of authors such as Andersson and Wictor (2003); Knight and Cavusgil (2004) and Mort and Weerawardena (2006). Later, Fan and Phan (2007) linked the concept of production capacity to *born global* firms, stating that these rapidly internationalization firms assign, from their birth, at least 20% of their production capacity to the international activity. Crick (2009) considered the location of *born global* firms and defined them as companies that start their international operations within three years after the foundation date and, that have, within the same period of time, a turnover of 10% in each of the following markets: North America, Western Europe, and South-East Asia. Below is a summary with the most relevant definitions presented in the literature over the years (Table 4).

Table 4: Summary of the definitions of *born global* firms

Author	**Definition**
(Rennie, 1993, p. 46)	*"(...) began exporting, on average, only two years after their foundation and achieved 76 percent of their total sales through exports."*
(Oviatt and McDougall, 1994, p. 49)	*"(...) a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries."*
(Madsen and Servais, 1997, p. 579)	*"(...) firms that seek to derive significant advantages from the use of resources or from the sale of outputs to multiple countries/continents right form their legal birth."*
(McAuley, 1999, p. 68)	*"(...) firms that are "instant internationals" as a result of rapidly becoming involved in international markets. Rapid involvement is defined as having international activities within the first year of being in business."*
(Andersson and Wictor, 2003, p. 254)	*"(...) a company that has achieved a foreign sales volume of at least 25% within 3 years of its inception and that seeks to derive significant competitive advantage from the use of resources and the sales of outputs in multiple countries."*

(Knight and Cavusgil, 2004, pp. 124, 125, 133)	*"(...)business organizations that, from or near their funding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries (...) the period from domestic establishment to initial foreign market entry is often 3 years or less (...) exporting at least 25% of total production."*
(Mort and Weerawardena, 2006, p. 559)	*"(...) firm had started exporting within the first three years of operation, and at least 25 per cent of sales income derived from exporting."*
(Freeman et al., 2006, p. 59)	*"(...) firms moved rapidly to realize their vision and become global players within two years."*
(Fan and Phan, 2007, p. 1116)	*"(...) firm as one that allocates at least 20% of its inaugural production capacity to international markets at inception."*
(Crick, 2009, p. 458)	*"(...) firms would be considered to have internationalized rapidly if this took place within three years of the foundation date(...)demonstrate commitment to each market by having a turnover within three years which was subjectively set with a figure of at least 10 per cent in each region (North America, Western Europe, and South-East Asia)."*

Source: Own elaboration based on literature review

As outlined above, there are several interpretations with regard to the concept of *born global* firms. Based on the available literature and, considering the initial description of Oviatt and McDougall (1994, p. 49) who defined *born global* as "*a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries.*", the author of this thesis adopts the following criteria to identify *born global* firms:

1. Time needed from the foundation until internationalisation: 0 to 3 years;
2. Foreign sales to total sales ratio: at least 25% within 3 years from the inception;
3. Managerial vision: global;
4. Business strategy: niche;
5. Type of learning: use of networks and founder's prior international experience;
6. Entry mode used: low commitment.

The first criterion, stating that time needed for *born global* firms to start their international activity is up to three years since the date of foundation, is consistent with a significant portion of *born global* studies (Freeman et al., 2006; Knight and Cavusgil, 2004; McAuley, 1999; Rennie, 1993; Mort and Weerawardena, 2006) . The second criterion, suggesting that *born global* firms have a minimum of 25 percent of foreign sales to total sales ratio within three years from their birth, has also been widely used in the literature regarding *born global* firms (Andersson and Wictor, 2003; Knight and Cavusgil, 2004; Mort and Weerawardena, 2006). However, it is important to mention that the foreign sales to total sales ratio used in this research is not limited to exports, as in other studies, to provide a more integrated approach of *born global* firms. The third criterion, stressing the importance for *born global* firms to have managers who view the world as a global marketplace, was first underlined by Rennie (1993) and, then used in subsequent studies (Andersson and Wictor, 2003; Madsen and Servais, 1997). This managerial global vision has been object of research with Harveston et al. (2000) and Moen (2002) finding significant differences between *born global* firms and firms that follow an international strategy through small and incremental movements, with the former having higher levels of global vision and international mindset. The fourth criterion, indicating that *born global* firms commonly follow a niche strategy, has been a common point among most of the literature (Knight, 2000; Knight and Cavusgil, 2004; Madsen and Servais, 1997; Oviatt and McDougall, 1994; Rennie, 1993). According to the scholars, *born global* firms tend to adopt niche strategies, offering specialised products targeted to specific groups of consumers due to the difficulties associated with attaining economies of scale based on large volume production. The fifth criterion, mentioning that *born global* firms strongly rely on the usage of networks to acquire international market knowledge, generates significant consensus within the field of *born global* firms (Freeman et al., 2006; Knight and Cavusgil, 2004; Sharma and Blomstermo, 2003). Those authors highlighted that due to size and age constraints, *born global* firms tend to lack resources and, to overcome specific market knowledge problems they establish strong network links that enable them to acquire know-how and, consequently succeed in the global market. Moreover, founders' prior international experience is also referred as an important source of international market knowledge (Andersson and Wictor, 2003; Madsen and Servais, 1997), being this an important competitive advantage for *born global* firms, since it allows them to make early international market commitment decisions. The sixth criterion, referring to the choice of foreign entry modes, has been widely discussed and debated within the *born global* literature. Sharma and Blomstermo (2003) suggested that entry modes used by *born global* firms may differ from company to company, which do not follow a fixed pattern and may adapt the entry strategy to the different needs of the different markets. Later, Rialp et al. (2005) and Aspelund et al. (2007), noticed a predominance of low commitment entry modes within these rapid internationalization firms which, due to the financial resources constraints that they usually face in the early stages of the foreign expansion, tend to choose exporting as the main mode of internationalization (Cavusgil and Knight 2015).

Overall, it is clear that *born global* firms possess a range of attributes that differentiates them from the remaining firms. However, it is also possible to observe that it has been difficult to find common ground regarding the interpretation of the concept itself. Therefore, despite some attempts aimed at standardising the notion of *born global* firms, there is still the need to do this, as Rialp et al. (2005, p. 163) note that there are *"still too heterogeneous operational definitions and indicators of early internationalizing firms currently available in the literature."*

Chapter II. Case Study Research Method

2.1. Research paradigms

Paradigm is commonly defined as a fundamental set of beliefs that shapes behaviours (Guba, 1990). In the business research sphere, a paradigm *"is a way of examining social phenomena from which particular understandings of these phenomena can be gained and explanations attempted."* (Saunders et al., 2009, p. 118). The way researchers answer to basic questions is an important issue and, as a consequence, Guba (1990, p. 18) highlighted three types of questions that can characterize paradigms:

- *"Ontology: What is the nature of the "knowable"? Or, what is the nature of "reality"?*
- *Epistemology: What is the nature of the relationship between the knower (the inquirer) and the known (or knowable)?*
- *Methodology: How should the inquirer go about finding out knowledge?"*

Moreover, during the research process, scholars commonly make important assumptions regarding how they perceive the world that often have a significant impact on the business research strategy used (Saunders et al., 2009). Thus, the concept that links the development of knowledge and the nature of that knowledge is known by research philosophy. According to Johnson and Clark (2006), researchers should carefully consider the effects of their philosophical engagement on the object of investigation. Bellow, the Table 5 presents the existing types of research philosophies in management research.

Table 5: Definitions of the existing research philosophies

Positivism	*"The epistemological position that advocates working with an observable social reality. The emphasis is on highly structured methodology to facilitate replication, and the end product can be law-like generalisations similar to those produced by the physical and natural scientists."* (Saunders et al., 2009, p. 598)
Realism	*"The epistemological position that objects exist independently of our knowledge of their existence. See also critical realism, direct realism."*(Saunders et al., 2009, p. 599)
Interpretivism	*"The epistemological position that advocates the necessity to understand differences between humans in their role as social actors."* (Saunders et al., 2009, p. 593)
Pragmatism	*"A position that argues that the most important determinant of the research philosophy adopted is the research question, arguing that it is possible to work within both positivist and interpretivist positions. It applies a practical approach, integrating different perspectives to help collect and interpret data."* (Saunders et al., 2009, p. 598)

Source: Own elaboration based on Saunders et al. (2009)

According to the above-mentioned descriptions, the research conducted for the purpose of current thesis follows a positivist approach in the sense it deals with a perceivable social reality and, that the final conclusions of the research can lead to important generalizations (Remenyi et al., 1998). Guba (1990) suggests that the basis of positivism is rooted in questions such as - How things really are? - or - How things really work? - to anticipate and forecast natural events and, Remenyi et al. (1998) highlight that one of the most relevant characteristics of the positivist approach is related with the concept of - value free research - in which the researcher acts as an independent objective analyst and interpreter of factual social reality, not being influenced by the topic of the research.

2.2. Research approaches

Within business research domain there are two major research approaches: deductive and inductive. The former is connected with the development of a theory through logically derived inferences, while the latter is related with the collection of evidence that subsequently serves as a basis for new theory formulation or reformulation of the existing theory (Saunders et al., 2009). Research approach relates to the use of qualitative and quantitative research methods. According to Saunders et al. (2009), the difference between both methods lies on utilization of numeric or non-numeric data. The author refers to quantitative *"as any data collection technique (such as a questionnaire) or data analysis procedure (such as graphs or statistics) that generates or uses numerical data*" and, qualitative as *"any data collection technique (such as an interview) or data analysis procedure (such as categorizing data) that generates or use non-numerical data."* (Saunders et al., 2009, p. 151). Moreover, researchers can use each technique individually or a combination of both depending on the objective of the study (Curran and Blackburn, 2000). This thesis relied on a qualitative approach, since it is mainly descriptive, and its main goal is to understand the interdependencies between the real-life phenomena. According to Gillham (2010), this kind of approach enables researchers to conduct investigations where procedures such as experiments are not applicable or ethically accepted, to investigate complex phenomena that overstep the bounds of other techniques and to perceive the case from an inside out perspective.

2.3. Case study research method

According to different authors, different research methods can be employed in a study. Yin (2014) suggests that experiments, surveys, histories, archival analyses and case studies are the five main forms of social research and, the choice to use each of them is influenced by three factors, namely the form of the research question, the control over the behavioural events and the focus on the contemporary events, as Table 6 illustrates.

Table 6: Relevant situations for different research methods

Method	Form of Research Question	Requires Control of Behavioural Events?	Focuses on Contemporary Events
Experiment	How? Why?	Yes	Yes
Survey	Who? What? Where? How many? How much?	No	Yes
Archival Analysis	Who? What? Where? How many? How much?	No	Yes/No
History	How? Why?	No	No
Case Study	How? Why?	No	Yes

Source: Adapted from Yin (2014)

Having in mind the three above-mentioned factors, case study research method was selected. Robson (2002, p. 178) defined case study as "*a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence".* In other words, case study is suitable when a researcher attempts to comprehend a real case situation and assumes it will involve key contextual circumstances relevant to the case (Yin and Davis, 2007). According to Yin (2014), when employing case study method, it is important to understand from the beginning that the case itself is not a sample unit and, consequently, statistical generalization does not apply to the findings of the case study. The right way to think about generalization of findings in a case study is through analytic generalizations, where these findings can extend to circumstances outside of the case study originally used based upon relevant theoretical principles (Yin, 2014).

Although there is not a formal design for case study research, including it can increase the chances to have a successful case study. Research design is *"a plan that logically links the research questions with the evidence to be collected and analyzed in a case study, ultimately circumscribing the types of findings that can emerge."* (Yin, 2014, p. 240). Based on the previous assumption, Yin (2014), identified four different types of designs for case studies (Figure 6).

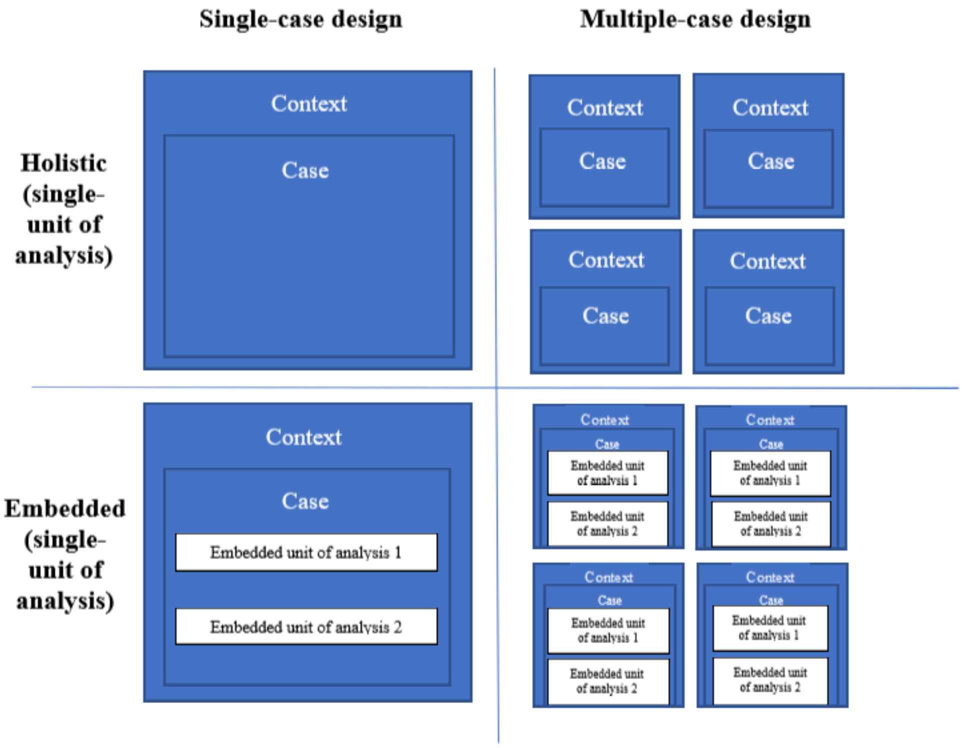

Figure 6: Basic types of designs for case studies
Source: Adapted from Yin (2014)

As the Figure 6 suggests, there are single-case (holistic) designs, single-case (embedded) designs, multiple-case (holistic) designs and multiple-case (embedded) designs (Yin, 2014). In a first stage, researchers can choose between a single-case study design or a multiple case study design. The difference between both designs lies on the number of case studies used in the research, being one in the case of single case studies and more than one in the case of multiple case studies (Yin, 2014). This thesis used a single case study design and, according to Yin (2014, p. 51), this specific type of design is applicable under certain circumstances, and five rationales, which are *"having a critical, unusual, common, revelatory, or longitudinal case."*. Moreover, single case studies can confirm, challenge or extend existing theory, adding value to knowledge and theory building. Another common distinction within case study research is related with units of analysis. Holistic design is considered if a case study explores an organization as a whole unit of analysis, whereas embedded design refers to case studies that look at different sub-units of analysis within an organization (Yin, 2014). Therefore, this research followed a holistic design since there is one unit of analysis: the firm.

Regarding the purpose of the research, case studies can be divided into exploratory, descriptive or explanatory, depending on the final objective (Saunders et al., 2009). Exploratory case studies aim to understand a particular phenomenon by asking the right questions to generate new insights, whereas descriptive case studies seek to exhaustively depict a specific situation (Robson, 2002). In their turn, explanatory case studies intend to understand the causality between different elements (Saunders et al., 2009). This research aims to explain the internationalization process of Science4You, meaning that the case study can be described as a descriptive one.

2.4. Choice of the research object

The selection of the most suitable case companies for research purposes can be achieved through two different sampling techniques: probability/representative sampling and non-probability/judgmental sampling. According to Saunders et al. (2009), the difference between both techniques lies on the likelihood of each case company being chosen from the entire population. When using probability sampling, the probability is known in advance and is usually the same for all the companies, whereas by using non-probability sampling the probability is not known (Saunders et al., 2009). Yin (2014) stated that *"In general, convenience, access and geographic proximity can be the main criteria for selecting the pilot case."* and, despite several companies were targeted as potential candidates for the pilot case, Science4You managers were the most available and enthusiastic to share their experiences. Overall, the main strength of the sampling method used – non-probability/judgmental sampling - arises from the possibility to select case companies with valuable information from where the researcher can develop a deep understanding regarding the central issues of the studied topic (Patton, 2002).

2.5. Data collection

According to Eisenhardt (1989), case study evidence comes from archives, interviews, questionnaires and observations. Yin (2014) highlighted six data collection methods: documents, interviews, direct observation, physical artefacts, archival records and participant-observation. Data collection can be classified into two categories: primary data and secondary data. Primary data is *"data collected specifically for the research project being undertaken"*, while secondary data refers to *"data used for research project that were originally collected for some other purpose."* (Saunders et al., 2009, pp. 598, 600). This usage of multiple sources of evidence when doing case study research, often referred to as triangulation, is a strong indicator of quality (Yin, 2014) and, is used to ensure a thorough understanding of the selected case study (Denzin, 2012). Bellow, Table 7 presents the advantages and disadvantages associated with the utilization of both main sources of evidence, namely interviews and documentation, present in this research.

Table 7: Sources of evidence: strengths and weaknesses

Source of Evidence	**Strengths**	**Weaknesses**
Documentation	• Stable – can be reviewed repeatedly; • Unobtrusive – not created as a result of the case study; • Specific – can contain the exact names, references, and details of an event; • Broad – can cover a long span of time, many events, and many settings.	• Retrievability – can be difficult to find; • Biased selectivity, if collection is incomplete; • Reporting bias – reflects (unknown) bias of any given document's author; • Access – may be deliberately withheld.
Interviews	• Targeted – focuses directly on case study topics; • Insightful – provides explanations as well as personal views (e.g., perceptions, attitudes, and meanings).	• Bias due to poorly articulated questions; • Response bias; • Inaccuracies due to poor recall; • Reflexivity – interview gives what interviewer wants to hear.

Source: Adapted from Yin (2014)

2.6. Data analysis

Data analysis *"consists of examining, categorizing, tabulating, testing, or otherwise recombining evidence, to produce empirically based findings."* (Yin, 2014, p. 132). The analysis of the case study findings is one the most challenging parts within case study research, therefore the usage of an analytic strategy plays a crucial role when analysing data. Firstly, they help to comprehend it by integrating related data from different sources, secondly, they are essential in identifying specific patterns that lead to the development of theories based on those relationships and, finally, they are the foundation for drawing the research conclusions. (Saunders et al., 2009). To better fit the purpose of this research the explanation-building strategy was used with the aim of matching the findings of the case study against the empirical findings. However, despite the wide range of analytic techniques available, what matters the most is to guarantee the highest level of quality within the analysis (Yin, 2014).

2.7. Case study quality criteria

In a first stance, the concepts of validity and reliability seem to be synonyms, however they have different meanings regarding the criteria for judging the quality of research designs

(Bryman and Bell, 2015). Despite the fact that research design is *"supposed to represent a logical set of statements"* (Yin, 2014, p. 45), researchers cannot totally assure the credibility of the research findings. In fact, the most that can be done is to decrease the chances of getting the wrong results through tests of reliability and validity (Saunders et al., 2009). There are four different types of tests to access the quality of research: reliability, construct validity, internal validity and external validity (Yin, 2014). Reliability *"refers to the consistency of a measure of a concept"* (Bryman and Bell, 2015, p. 169), therefore it is concerned with the extent to which the research will provide consistent conclusions (Saunders et al., 2009). In other words, the aim of reliability is to minimize eventual biases and errors over the execution of a study, allowing future researchers to reach the same conclusions by following the same procedures utilized by previous researchers (Yin, 2014). There are several threats to reliability, Robson (2002) identified four major: subject/participant error, subject/participant bias, observer error and observer bias. The first one, subject/participant error, implies that data collected in different points in time might generate different results. The second one, subject/participant bias, refers to external forces influencing the answers of the interviewees. The third one, observer error, stands for different results obtained from different interviews. Lastly, the fourth one, observer bias, means different interpretations regarding the same answer (Saunders et al., 2009). The above-mentioned threats are not a major issue in this research since the main sources of data collection for the case study were three audio recorded interviews in a convenient specific point in time and, the use of a semi-structured interviews assured a significant degree of structure. Moreover, the participants are top level managers, which means high levels of autonomy within the respective companies and reveal a high commitment to this study. Construct validity refers to establishing accurate operational procedures for the studied concepts (Yin, 2014) to avoid subjective judgements related with researchers' predetermined ideas (Flyvbjerg, 2006; Ruddin, 2006). Researchers usually rely on three different methods to increase construct validity, namely usage of multiple sources of evidence, previously referred as triangulation, the establishment of a chain of evidence and the revision of the case study by the participants are fundamental drivers to increase construct validity (Yin, 2014). Internal validity, in its turn, is concerned with causal relationships, being this a major issue for case study research due to the need of making inferences when the option regarding an event's direct observation is not available. The author suggests four analytic strategies to deal with internal validity: pattern matching, explanation building, addressing rival explanations and using logic models. Lastly, external validity is associated with the topic of generalisation of the findings and, since (Yin, 2014). In other words, it deals with the extent to which the research results are applicable to other research contexts.

Chapter III. Research Findings

3.1. Research process

This research used a single case study design, being the unit of analysis the Portuguese firm Science4You. The case company was chosen based on a subjective judgement to better fit the objective of the study through a non-probability sampling, more specifically a purposeful sampling. The present study contains a combination of both primary and secondary data, aiming to help answer the research questions. Primary data was gathered through one face-to-face interview and two phone interviews, whereas secondary data was collected through the company's website, company's annual reports and brochures given by the studied company. The face-to-face and mobile interviews used as primary data in this research were semi-structured interviews (Saunders et al., 2009), often referred as qualitative research interviews (King, 2004) . This form of interviewing lies on a set of topics and questions previously defined to be covered during the interview, allowing a great flexibility, since it enables he interviewer to change the order of the questions or even add/omit some of them depending on the context of the situation (Saunders et al., 2009). Since *"Asking good questions is to understand that research is about questions and not necessarily about answers"* (Yin, 2014, p. 74), a significant portion of time was dedicated to formulating interview questionnaire that could provide relevant information for this study (see the full interviews in the Appendix). The first section of the questionnaire contains general information about the interviewees whereas the second part includes more specific and detailed questions related to the foreign expansion of the company.

The interviewees were chosen based on the expected high level of knowledge regarding the internationalization process of the studied company: Mr. Miguel Pina Martins, founder and CEO of Science4You, Mr. Tiago Alves, Vice President and Head of International Business of Sicence4You and Mr. Manuel Laia, Partner and International Sales Manager of Science4You were the most suitable and appropriate individuals to interview. The first interview with Mr. Manuel Laia was carried out at a convenient location for the international manager. This face-to-face interview was held in Loures (Portugal) on the 22^{nd} of December of 2017 in the headquarters of Science4You and lasted 26 minutes. The second interview with Mr. Miguel Pina Martins was held on the 5^{th} of April of 2018 and was a 11-minute conversation. The third interview was conducted on the 19^{th} of July with a duration of 12 minutes. The second and the third interviews were performed by phone due to geographic constraints. All the three interviews were audio recorded, using a mobile phone device, with the permission of the interviewees to facilitate the interaction and, most important, to avoid the risk of losing important information. According to Saunders (2011), audio recorded interviews enable the interviewer to listen attentively to the provided information and to focus on key expressions and other non-verbal cues during the interview. The three interviews were conducted in Portuguese since it was the native language of all involved participants, allowing a better flow of information during the conversations. The audio records were, afterwards, transcribed verbatim, and translated into English.

3.2. Science4You background information

Table 8: Summary of the main events associated with the internationalization process of the firm

Year	Event
2008	Foundation: Lisbon, Portugal;
2010	Start of "Science4You - Internationalization and R&D" project; Export to Spain;
2011	Subsidiary in Madrid, Spain; Export to Angola, Brazil and Mozambique, Finland; Office in Porto, Portugal;
2012	Export to Italy, France, Ireland, Cape Verde, Japan and India;
2013	Subsidiary in London, England; Export to Poland;
2014	Export to South Africa, Lebanon, USA, Canada and Singapore;
2015	Export to Czech Republic, Hungary, Romania, Estonia, Latvia, Lithuania, Serbia, Slovenia, Slovakia, Chile and Australia;
2016	Export to China, Denmark, Sweden and Norway;
2017	Export to Russia, Morocco, Switzerland, Austria and Dominican Republic;
2018	Export to New Zealand;

Source: Own elaboration based on Science4You materials

Science4You is a 100% Portuguese company that mainly develops, produces and sells educational and scientific toys worldwide. Apart from the core business, the company also focuses on the development of activities targeted for children such as birthday parties, summer camps and scientific workshops. The main goal of Science4You is to promote a sense of "learning while playing" among kids, supported by the company's mission *"Improve society's education levels through the development of toys and games that allow children to learn while they play"* (Science4You website, 2018), turning this into a key differentiating factor when compared with other toy companies.

Science4You was founded in 2008 a result of an entrepreneurship project done by the founder and CEO, Miguel Pina Martins, who at that time was only 21 years old. The idea was born in a classroom of Instituto Superior de Ciências do Trabalho e da Empresa - Instituto

Universitário de Lisboa (ISCTE-IUL), which developed business plans for ideas created by Faculdade de Ciências da Universidade de Lisboa (FCUL). Consequently, during an entrepreneurship project course, the current CEO chose randomly and, out of 10 topic possibilities, the one that would be the trigger for the creation of Science4You - physics kits - later transformed in educational and scientific toys (Video Interview, 2012).

After working for 4 months in investment banking, Mr. Miguel Pina Martins decided to grab the opportunity to develop and re-embrace the entrepreneurship project idea on a full-time basis. Backed by ventures capital and endorsed by FCUL, the company was initially established during a severe economic crisis, being a pioneer in the niche of scientific toys of the educational toys segment in Portugal (Video Interview, 2012). At the beginning, the partnership with FCUL was extremely important not only because of quality certification granted by the university to all toys produced, but mainly due to the location of the company's infrastructure inserted in the university campus, together with several incubated firms resulting in greater synergies and in the spread of scientific and technological know-how. Another key collaboration was with scientific and childhood museums, in which free tickets were introduced inside the toys' packages. In order to enhance the learning experience, there is also an educational manual inside each package that covers the most relevant topics related to the respective toy. Regarding the distribution channels, Science4You toys can be found in big and small retail stores, company owned stands located in several shopping malls and in company's online store.

3.3. International growth of Science4You

Internationalization was since the inception a goal for Mr. Miguel Pina Martins, the founder and CEO of the company. The choice of the name "Science4You" was not made randomly and the decision to expand abroad was based on the small size of the Portuguese market. As Mr. Manuel Laia remarks:

"We decided to expand because the [foreign] market is much bigger. The Portuguese market [internal market] is small, mature and saturated."

In 2010, the company launched the project called: "Science4You - Internationalization and R&D" with the aim of expanding the international business:

"There are two main reasons for Internationalization: Visibility and Growth. The future is going more and more international (...) we are a company that tries to take advantage of every opportunity." (Manuel Laia)

Science4You started its internationalization process in 2010, two years after its establishment, when the company started exporting to Spain. The expansion to the Spanish market was a natural move due to the geographic proximity of both markets. Despite being a neighbourhood country, Spain was not an easy market to enter since there were already several companies addressing the segment of educational and scientific toys, in contrast to Portugal where the company was the pioneer. In the words of Mr. Miguel Pina Martins:

"(...) the entrance in the Spanish market is easy to explain because it is a neighbourhood country, and, in theory, the closest countries are usually the first choice for the beginning of the international expansion."

Science4You embarked on the Spanish journey with the help of FNAC, who was already the company's distributor in Portugal. Later, these inter-firm relationships were also important to enter the French, Italian and Polish market, being the company supported by FNAC, Auchan and Jeronimo Martins respectively:

"Science4You entered the Spanish market with help of FNAC. Later, the entrance in the French and in the Italian market was supported by FNAC and Auchan, respectively. Regarding the expansion to the Polish market, the Portuguese company Jeronimo Martins played an important role in the success of that operation." (Tiago Alves)

In the case of the international expansion of Science4You, the establishment of such networks was an important tool to leverage the internationalization process of the firm due to size and age constraints. As Mr. Tiago Alves notices:

"Science4You brand was not known in those countries so (...) without the recommendations of FNAC Portugal, Auchan Portugal and Jeronimo Martins Portugal, probably it would not be possible for Science4you to enter in those markets so quickly."

In 2011 Science4You opened a subsidiary in Madrid, Spain for strategic purposes. There are several reasons for the establishment in Madrid. According to Mr. Miguel Pina *Martins:*

"(…) moving between Spain and Portugal is inexpensive and, since Spanish is the second most spoken language in the world, this was an important step to enter in the South and Central America markets. Lastly, the Spanish market is included in the top five of the largest European markets for toys."

Science4You opted for a replication of the Portuguese business strategy during that period. The company established a partnership with Universidad Autónoma de Madrid, disposing the logo of the university on the toys' packages, working as a certification of the quality of the products. Moreover, Science4You collaborated with scientific and childhood museums to have free tickets inside each toy's package and offered several complement services, such as birthday parties, summer camps and scientific workshops, similarly to Portugal. The company locally adapted its products to the Spanish market through the translation of the packages and manuals into Castilian, offering in the first place the best-sellers on the Portuguese market and then, gradually introducing the other toys:

"The company does some adaptations. For example, the language of the packaging as well as the instructions of the toys are translated into the respective language." (Manuel Laia)

During the year of 2011, Science4You started to export to Angola, Mozambique and Brazil. The decision to enter in those markets was taken based on the historical relationships between Portugal and these countries. Moreover, since the language spoken in Angola, Mozambique and Brazil is Portuguese, the company did not have to adapt the packages and manuals, having transformed, at the beginning, the internationalization process to those countries into a natural and smooth journey:

"Early entrance in Angola, Mozambique and Brazil can be explained by the common language: Portuguese. Basically, Science4You had already a product for those markets because it was not necessary to make changes." (Miguel Pina Martins)

However, doing business in the Brazilian market have become a steep hill to climb due to legal/institutional differences. The company had to adapt some of the products for the Brazilian market since some components present on the toys are forbidden in the country:

"In Brazil and in some other Latin America countries there are some components that are prohibited, and we have to adapt our products." (Manuel Laia)

Another barrier present in the Brazilian market is additional payments due to legal requirements:

"In Brazil, we have to pay 20.000 euro to the government every 6 months for them to visit and certify our factory." (Manuel Laia)

To overcome this barrier, Science4You is planning to change the Brazilian strategy, as explained by Mr. Manuel Laia:

"*Due to this problem we are re-thinking our strategy in Brazil. In the future, we will make a royalty agreement (...) Science4You is negotiating with a partner to sign an exclusivity and confidentiality contract in which we transfer the formulas, the technical datasheets, etc, and the partner will be responsible to find production plants or local suppliers to replicate our products, paying to us a fixed value plus royalties based on sales."*

Unfortunately, this is not exclusive to the Brazilian market. Science4You has been facing several obstacles during its international expansion. Due to legislative and bureaucratic barriers the company was also forced to adapt some of its toys that are exported to Russia and to the United Arab Emirates:

"In the Russian market they have extremely rigorous requirements regarding the control and the certifications. For example, if we say that we are sending 10.009 "Fábricas Viscosas" and they receive in fact 10.011, the order is stopped at customs (...) For example, in Dubai we cannot sell our toy "Fábrica Viscosa" because the original has gelatine with traces of pork meat." (Manuel Laia)

Later in 2011, Science4You branch in Porto was established with the objective to have a strict control over the sales and negotiations in the northern region of Portugal and continue to provide the activities targeted for children that were, at that time, limited to the region of Lisbon.

Within the scope of the "Science4You - Internationalization and R&D" project, the company has been regularly present in several international toys events since 2012, having participated in the most important toys fairs such as Nuremberg Toy Fair, London Toy Fair or Hong Kong Toys and Games Fair. Those events have an important role in the internationalization strategy of the company since they gather thousands of potential clients, being an important element to establish partnerships with potential business partners from all over the world:

"Science4You has not a defined international strategy, most of the times these are clients or distributors who come to us, thus international fairs are crucial to establish those networks." (Miguel Pina Martins)

At the beginning of 2013 Science4You settled a subsidiary in London with the strategic objective of entering the UK market and, consequently, boost the international business:

"The international business has growth significantly since 2015 (...) The main driver of the international revenue growth was the success of the company in the UK market over the last couple of years (the biggest European market) which, subsequently, leveraged the business in other foreign markets." (Manuel Laia)

Later, the company realized that the establishment of both subsidiaries in Madrid and London was a strategic mistake since it was not profitable to replicate the Portuguese strategy abroad. This was explained by Mr. Manuel Laia:

"This model does not make sense abroad [this applies also to the Spanish Market] because the stores imply control. Another reason for the failure in both markets was real estate market, which is extremely expensive. The sales volume was not high enough to compensate those high fixed costs."

However, the company learned from the setback and quickly returned to the previous model in the UK, as it looked for distributors and started to work directly (from Lisbon) with the retailers in the Spanish market:

"The model was not correct because it was not profitable, we took some steps back, rethought and came up with new models: exporting through distributors in the UK and working directly with the retailers in the Spanish market." (Manuel Laia)

The decision to enter in the UK market was virtually made from the inception of the company, since it would necessarily be the first step to further conquer an important share in the global toy market. The decision to expand to the UK market was based on two factors, as explained by Mr. Miguel Pina Martins:

"(...) the UK market was also a natural step in the internationalization process of the company due to the easiness of communication. English is a worldwide language and is understandable by almost everyone, thus allowing the company to enter in a great number of markets. Moreover, the UK market is the biggest European toy market, so those two reasons ended up being the most significant ones and they explain the importance of this market for the international strategy of the company."

Despite being aware of the great opportunities offered by the UK market, Science4You was also conscious of the challenges it would bring. Namely, the big number of competitors makes this market highly competitive. However, the positive results achieved by the Portuguese and Spanish operations and, the respective lessons learned were essential to surpass the obstacles imposed by the UK market. Similarly to Spain and Portugal, the company established a partnership with the University of Oxford to have its logo on the package as a certification of the quality of the product and to benefit from the scientists know-how regarding product development.

In the meantime, in 2013, the company started to export to Poland. The company took advantage of the strong presence of Jeronimo Martins in the country and, as has happened in Spain and France with FNAC and in Italy with Auchan, Science4You entered in a new market through a partnership. At that time, the entrance on the Polish market was extremely important since the company reached invoiced sales of 200.000 euro in January, changing in terms of logistic the status quo of the company, considering the seasonality of the toy business (Video Interview, 2012)

Regarding the entry to all other markets, there are no specific premises behind each expansion. Since Science4You has not a structured international expansion strategy, the firm just takes advantage of the opportunities that emerged during its international path:

"It can be said that the remaining markets came towards us and not the opposite." (Miguel Pina Martins)

Despite being present in several countries outside Europe, Science4You's strategic expansion priority is the European market and, this is due to one important factor – proximity:

"Obviously, Europe is the continent that makes more sense to have a stronger presence because the production facility is located in Portugal and, as a consequence, the proximity is a competitive advantage." (Miguel Pina Martins)

Stepping back in time, concerning to the choice of foreign market entry modes, Science4You began its foreign expansion by working directly with retailers and through intermediary companies, namely agents. Although the great number of new markets conquered using those market penetration strategies, Science4You was facing a major obstacle – inefficiency:

"Science4You was extremely inefficient regarding forecasting performance (...) agents were not able to force retailers to make accurate forecasts and, most important, they were not able to force them to request orders within a decent period of time." (Tiago Alves)

Moreover, since the agents' main role was to receive the products from Sience4You and then place them on the retailers' shelves, there was an important gap to fill with respect to the promotion of the toys:

"*(...) the product can be present in the major retail stores [because of the contacts] but the marketing does not exist [and the marketing is crucial to increase the sales]." (Manuel Laia)*

These reasons led to the withdraw of agency mode as main market entry strategy. Nowadays, the firm relies only on distributors - excluding the Spanish market and, soon the Brazilian market – since they are capable to fill the agents' gap. Distributors take all the risk associated with the forecasting sales, as they do them on their own and, all the marketing activities related to the toys in the host country. In the words of Mr. Tiago Alves:

"(...) the distributors operate as bulk buyers, purchasing big quantities of toys from us to sell them later to retailers. They pay in advance and they pay less than retailers [it is true] but the risk is transferred to them (...) Another advantage of the distributors is that they are responsible for all the marketing, leading to an increase of the sales in the respective market."

Fifteen years later, Science4You is present in more than 40 countries with an annual revenue of 27.000.000 euro and 279 employees. As the Figure 7 illustrates, currently, the percentage of income from foreign sales to total sales is almost 73%, showing the importance of the international strategy for the company.

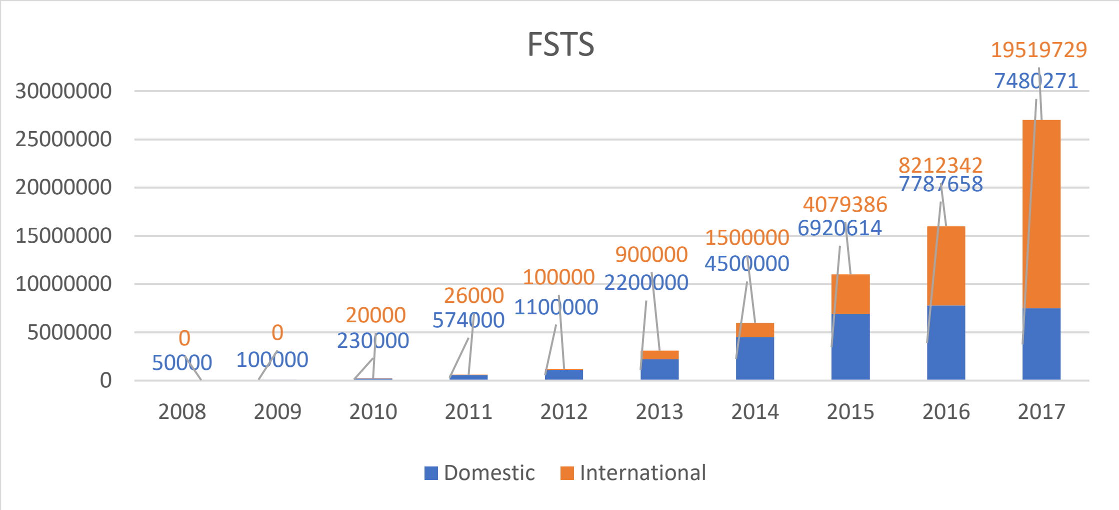

Figure 7: Evolution of the total sales to foreign sales of Science4You (in Euros)
Source: Own elaboration based on Science4You materials

Chapter IV. Discussion and Interpretation of research findings

The objective of this chapter is to provide answers to the three research questions pointed out in the introduction by matching the theory presented in the Chapter I and the data collected presented in the Chapter III.

The research purpose is to explore the internationalization process of Science4You. Therefore, each research question will be targeted individually by confronting the existing literature and the information obtained through data collection.

Research Question 1: Which internationalization model is applicable to foreign expansion of Science4You?

The case study's data provides important information regarding the internationalization process of Science4You. The international expansion of the firm will be analysed according to nine important factors based on literature review of the Uppsala and accelerated internationalization models:

- Firms' characteristics;
- Time needed to internationalize;
- Importance of the domestic market;
- Firm's business strategy;
- Extent of internationalization;
- Impact of psychic distance;
- Vision of the foreign market;
- Role of networks;
- International know-how and experience.

According to Rennie (1993), *born global* firms are young and small-medium size companies that contrast with experienced and large size companies. The latter are characterized by slow and gradual international expansion, being typically associated with the Uppsala model (Johanson and Vahlne, 1977). Science4You was founded ten years ago, in 2008, by the CEO Miguel Pina Martins. Since that time, the total annual revenues have been constantly doubling, achieving in 2017 the value of 27.000.000 euro. Moreover, currently the analysed firm employs 279 people. This being said, Science4You can be considered a young and small-medium size company and, according to these characteristics the firm fits best in the *born global* literature.

Despite the disparities within *born global* literature regarding the time needed for internationalization, a significant number of authors considered that this type of firms start their internationalization process up to three years since their inception (Freeman et al., 2006; Knight and Cavusgil, 2004; McAuley, 1999; Rennie, 1993; Mort and Weerawardena, 2006), being an example of early and rapid internationalization. Furthermore, although the Uppsala model does not specify the time needed for a firm to engage in international activity, the authors described the internationalization process of firms as a slow and gradual process (Johanson and Vahlne, 1977). In 2010, in its third year of business activity, Science4You had international revenues of 20.000 euro as a result of the entry on the Spanish market. Therefore, the studied firm again matches the requirements of the *born global* literature.

Regarding the domestic market, on one hand, the Uppsala model suggests that firms established a strong foundation inside borders before starting to expand abroad, on the other hand, the significance of the home market for *born global* approach is limited, being often small or even inexistent (Rennie, 1993). In addition, several authors stated that *born global* firms should have at least 25 percent of foreign sales to total sales ratio during the first three years of business activity (Andersson and Wictor, 2003; Knight and Cavusgil, 2004; Mort and Weerawardena, 2006). Over the first two years of activity, Science4You consolidated its position in the Portuguese market, having achieved annual revenues of 100.000 euro just as domestic player. At the end of 2010, three years after the foundation of the company, the foreign sales to total sales ratio was 8%. From 2010 to 2017 the international business grew almost 10.000%, to the point when FSTS ratio represents now around 72%. Thus, according to the previous information, Science4You seems to have some characteristics that better suit the Uppsala model regarding the importance of the domestic market.

Johanson and Wiedersheim-Paul (1975) considered that the firms' first step towards international expansion is often not planned and unconscious and, later, Johanson and Vahlne (1990) stated that internationalization processes are the outcome of a mix of strategic reasoning and action, increasing progress, opportunity and necessity, suggesting that internationalization is not a major objective. In contrast, *born global* firms seek to achieve competitive advantage through a proactive internationalization strategy since the inception (Rennie, 1993), and tend to pursue a niche strategy by offering innovative products targeted to a particular group of consumers (Knight, 2000; Knight and Cavusgil, 2004; Madsen and Servais, 1997; Oviatt and McDougall, 1994; Rennie, 1993). Internationalization was already an objective of the CEO of Science4You, as confirmed by himself in the interview, even before the foundation of the firm. The choice of name in English was not made randomly, since Mr. Miguel Pina Martins was conscious that international expansion would be an essential step to leverage the business within the first years of activity. Scince4You was also a pioneer in the niche of scientific toys of the educational toys segment in Portugal, clearly showing that the business strategy of the company is in line with the *born global* literature.

Concerning the extent of internationalization, the Uppsala model supports an approach where the international markets are developed gradually, one market at a time, through small and incremental movements (Johanson and Vahlne, 1977). In contrast, due to superior organizational capabilities, *born global* firms can easily and quickly replicate those capabilities in multiple locations at the same time, enabling them to develop several markets at once (Knight and Cavusgil, 2004). Since the beginning of the internationalization process of the firm, Science4You has entered multiple markets simultaneously. The year of 2015 was the year in which the company reinforced its position in the international market, entering eleven markets during that period. Once more, considering the extent of internationalization factor, Science4You presents characteristics corresponding to the *born global* phenomenon.

In the traditional view, psychic distance has a great impact in the internationalization process of firms as they tend to expand to markets that are similar to the home market and, only in a second stage, they begin to enter markets with higher psychic distances (Johanson and Vahlne, 1977). In line with *born global* literature, psychic distance has a minimal relevance regarding international expansion, since it is no longer related with the firm's pattern of internationalization (Madsen and Servais, 1997). In 2009, Science4You started its global expansion by exporting to Spain and, as Mr. Miguel Pina Martins explained, since neighbourhood countries are usually the first option when firms start their foreign expansion, the entrance in the Spanish market ended up being a natural step towards the international strategy of Science4You**.** Then, during the year of 2011, the company began the second wave of the internationalization process and started to export to Brazil, Mozambique and Angola and, as confirmed in the interview by Mr. Miguel Pina Martins, the Portuguese language, mother tongue of the three aforementioned countries, was the reason behind the early entrance into these markets. Therefore, psychic distance played a major role in the early days of foreign expansion of the company, suggesting a better fit with the Uppsala model.

The international market is perceived differently by both approaches. While the traditional model suggests gradual commitments to foreign markets due to high risks and high level of uncertainty associated with those markets (Johanson and Vahlne, 1977), the literature on *born globals* explains that founders perceive the global market as a window of opportunities (Madsen and Servais, 1997; Oviatt and McDougall, 1994). Both uncertainty and risk do not have a negative impact on the firm's internationalization process in case of the studied firm, as it is, according to Mr. Manuel Laia, a company that is always seeking out new opportunities to strengthen its international position, thus suggesting a link with the *born global* literature.

Both approaches highlight the importance of networks in the internationalization process of firms. In the revised version of the Uppsala model, firms use their networks in the beginning of the international expansion, being later replaced by firm's own resources (Johanson and Vahlne, 2009). Research on *born global* firms suggests that networks are also extremely important for the firm's internationalization due to the size and age constraints that force them to establish strong network links to acquire the needed knowledge to succeed in the global arena (Sharma and Blomstermo, 2003). Science4You relied on networks to enter foreign markets. The company entered the Spanish market with help of FNAC. Moreover, the entrance in the French and in the Italian market was supported by FNAC and Auchan, respectively. Finally, the company took advantage of the strong presence of the Portuguese company and food retail leader Jeronimo Martins in Poland and, entered the polish market supported by them, having the company played an important role in the success of that operation. According to Mr. Manuel Laia, the contacts are a key element within international expansion and, International Fairs are critical to establish those networks, being an important instrument to leverage the internationalization process of the company. In line with the literature on *born global* phenomenon, size and age constraints were important drivers for the establishment of such networks in case of the studied firm since, according to Mr. Tiago Alves, Science4You brand was not known in those countries when these partnerships were established and, without the recommendations of FNAC Portugal, Auchan Portugal and Jeronimo Martins Portugal, the entry in such markets would probably have been more turbulent. Finally, regarding international know-how and experience, the traditional model states that knowledge about international market can only be acquired by experience in international operations (Johanson and Vahlne, 1977), while the *born global* literature suggests that the founders' prior international experience plays a major role in the acquisition of international knowledge (Madsen and Servais, 1997). Since the founder and CEO of Science4You had no previous international experience before the inception of the company, the acquisition of international knowledge was leveraged by the experiential learning in the global market. As an example, after the failure associated with the establishment of both subsidiaries in Madrid and London, the company took some steps back, rethought and came up with new models. Therefore, concerning international know-how and experience factor, Science4You behaviour is supported by the Uppsala model.

The following Table 9 summarizes the above-mentioned information regarding the most important factors affecting the internationalization process of a Science4You.

Table 9: Summary of the most important factors affecting the internationalization process of the studied firm

Criteria	**Uppsala model**	***Born global* phenomenon**
Firms characteristics	☒ Old and large firms;	☑ Young and small-medium size firms;
Time to internationalize	☒ Not specified in the model;	☑ 0 to 3 after the inception; quick process;
Role of home Market	☑ Strongly developed domestic market base before internationalization;	☒ Irrelevant domestic market: small or inexistent; FSTS ratio > 25% after 3 years of inception;
Business strategy	☒ Internationalization is not the main goal of the firm;	☑ Competitive advantage requires internationalization almost from the inception; Innovative products oriented to niche markets;
Extent of internationalization	☒ International markets developed sequentially; Single market at a time;	☑ Several international markets developed at the same time;
Psychic distance	☑ International expansion first to close psychic distance markets;	☒ Psychic distance is not an obstacle for internationalization;
Vision of the foreign market	☒ Foreign markets are perceived as involving high risks and high levels of uncertainty; Gradual commitments to foreign markets;	☑ Foreign markets are perceived as a window of opportunity to leverage the business;
Role of networks	☒ Relative importance during the early stages of international expansion and replaced over the time by the firm's own resources;	☑ Networks are extremely important for the firm's rapid and successful international expansion and exposure;
International know-how and experience	☑ International knowledge can only be acquired with learning experience after the company' expansion.	☒ The founder and entrepreneur play a key role in the internationalization process by possessing international experience and know-how regarding foreign markets.

☑ - Science4You satisfy the internationalization requirement

☒ - Science4You does not satisfy the internationalization requirement

Source: Own elaboration based on literature review and own research

According to the above-mentioned findings, despite the predominance of characteristics that better fit the *born global* literature, Science4You also presents few characteristics supported by the Uppsala model, thus suggesting that both theoretical approaches play a role in explaining the internationalization process of the company**.**

Research Question 2: Why did the company choose direct exporting through distributors as the main foreign entry mode?

The information included in the case study provides a logical reasoning behind the choice of the foreign entry modes strategies adopted by Science4You. The selection of the right entry mode when developing a foreign market is a complex task and should only be considered after taking into consideration three distinct decisions: the decision on which markets to enter, the timing of the entrance on these foreign markets and the commitment to these foreign markets (Hill, 2009).

According to Griffin and Pustay (2012), firms decide to engage in exporting activities when opportunities in the home country start to decrease due to the saturation of the market. In fact, that was the reason why Science4You started to export to Spain in 2010 as confirmed by Mr. Manuel Laia in the interview.

When Science4You started its international expansion, the entry was operated directly by the firm, either through agents or through a straight collaboration with the retailers. Despite having successfully entered in several markets, the firm was facing a major problem – lack of efficiency. As explained by Mr. Tiago Alves, agents were not able to force retailers to make accurate forecasts neither to force them to request orders within a reasonable period of time, thus turning Science4You into an extremely inefficient company regarding forecasting performance. Shortly speaking, the main task of an agent is to find clients for the manufacturer and to sell their products in the foreign country, charging a commission fee based on sales activity (Albaum and Duerr, 2008; Hollensen, 2008). Since the agents' responsibilities do not include the development of marketing and promotion strategies, Mr. Tiago Alves highlighted the existence of a gap because the agent simply receives the product from the manufacturer and places it on the retailers' shelves. Therefore, as explained by the Vice President and Head of the International Business, despite being present in the major retail stores, the product is put up for sale without marketing, increasing the chance of losing potential customers due to brand unfamiliarity. The above-mentioned drawbacks associated with the use of agents as a foreign market entry mode strategy led to the abandonment of the agency mode as part of the international expansion of Science4You. Currently, the firm works only with distributors – the only exceptions are the Spanish market and in the near future the Brazilian market - and, despite being often referred as synonyms, there are significant differences between these two particular types of direct exporting. In fact, both agents and distributors are independent firms located in a foreign target market that have the responsibility to represent the manufacturer firm and to sell its products on that specific market (Albaum and Duerr, 2008; Hollensen, 2008). However, the extent and nature of that responsibility differs for each of the concepts, being the distributors in charge of the purchase and subsequent stock of the products acquired from the manufacturer based on their own forecasts, and also in charge of establishing of an independent marketing plan where features such as promotion or the selling price are set according to the distributor local strategy (Albaum and Duerr, 2008; Hollensen, 2008).

In a broader sense, direct exporting enables firms to expand to foreign markets without committing substantial financial resources such as the cost of the establishment of production sites in the foreign market and also allows them to overcome obstacles to foreign investment imposed by the host nations (Griffin and Pustay, 2012). In addition, firms have the possibility to take advantage of the intermediary firms' local market knowledge and network (Albaum and Duerr, 2008; Hollensen, 2008).

The case study analysis points out the two main reasons behind the choice of exporting through distributors to leverage the internationalization process of the firm. Firstly, as these intermediaries work directly with the retailers, they are able to assume all the risks related to their own forecasts. Secondly, the distributors are responsible for all the marketing activity, leading to an increase of the sales in the respective market due to the local adaption of the marketing strategies to the respective foreign market.

Research Question 3: What have been the main challenges faced by Science4You in the internationalization process?

Despite growing opportunities offered by the world economy leveraged by the phenomenon of globalization, firms' decisions to expand internationally are made after taking into consideration a mix of advantages and disadvantages associated with the foreign expansion. This type of analysis is done by firms to try to predict the risks and rewards of internationalization decisions that are often impacted by several factors, including transportation costs, trade barriers or political and economic risks (Hill, 2009).

As mentioned before, Science4You uses direct exporting through distributors as its major foreign entry mode and, regardless of its advantages, tariff barriers, legislative and bureaucratic restrictions and problems with intermediary companies can constitute significant obstacles to internationalization and, consequently turn exporting into a complex operation (Griffin and Pustay, 2012; Hill, 2009).

Since the start of its internationalization process, Science4You has been dealing with several obstacles, being the most common the legislative and bureaucratic barriers, affecting the business in markets such as United Arab Emirates, Russia, Spain, UK or Brazil. In the case of United Arab Emirates, the company had to adapt one of its most famous toys – Fábrica Viscosa – because the original has gelatine with traces of pork meat. The company has also been facing some challenges regarding control and certifications in the Russian market. As explained by Mr. Manuel Laia in the interview, if the company says that is sending 10.009 units of a certain toy and they receive in fact 10.011 units, the entire order is stopped at customs. Moreover, the establishment of wholly owned subsidiaries in the form of greenfield investments in Spain and in the UK, namely in Madrid and London, turned out to be a strategic mistake. According to Hill (2009) and Kumar and Subramanian (1997), setting up a greenfield venture implies that a firm possesses 100% of the stock and involves a significant start-up investment to establish subsidiary from square one. The company realized that this approach – replication of the Portuguese model abroad – is not profitable outside national borders since it implies high levels of control and high real estate market prices and, according to Mr. Manuel Laia, the sales volume was not high enough to compensate those high fixed costs. Therefore, Sciece4You overcame those challenges by re-designing the internationalization models and, currently the firm is exporting through distributors in the UK and working directly with the retailers in the Spanish market.

Another challenging situation emerged from the Brazilian market since, despite all the legal and institutional differences that force Science4You to modify some of the toys, according to the International Sales Manager, the company has to make semi-annual payments of 20.000 euro to the Brazilian government for them to visit and certify the firm's factory in Portugal. Currently, Science4You is developing a strategy to overcome this market entry barrier and, in the near future the firm will make a licensing agreement. The re-designed strategy is in line with Hill (2009) reasoning, since the author stated that licensing could be an important instrument to overcome barriers to entry in foreign markets. Shortly, Science4You is going to establish a partnership and sign an exclusivity and confidentially agreement where the company will transfer the products' formulas and technical datasheets. Additionally, the partner will be responsible to find production facilities or local suppliers to replicate the firm's toys, paying to Science4You a fixed value plus royalties based on sales.

Despite all the obstacles that Science4You has been facing during its international path, the firm was always able to successfully overcome them due to the talent and skill of the young decision makers that always have managed creative ways to succeed by doing things right and on time.

Conclusions

Over the years, several authors tried to develop theoretical approaches (see Chapter I for a detailed review) with the aim of understanding the advantages of engaging in international activity and the pattern of the global trade. Although the absence of a unified approach of the firm's international expansion, the purpose of this research is not to present a general theory but to provide a more integrated view of the internationalization process of firms.

Despite the changing international business environment since the 1980s where phenomena such as globalization or technological changes started to play a major role within international business strategy, obtaining and sustaining competitive advantage across national borders is still a complex process due to the multiple obstacles and barriers that firms must face. This study has focused on the internationalization process of Science4You. The company is not an exception, since although its successful international expansion, several challenges have been overcome along the international process. Science4You has faced legislative and bureaucratic barriers in United Arab Emirates, Russia, Spain, UK and Brazil (see Chapter IV), showing that despite penetrating foreign markets is getting easier as time passes, international managers are still forced to deal with the numerous constraints that might disturb the firm's internationalization process.

All the internationalization theories and models developed over the last decades have contributed to the better understanding of the firm's internationalization process and, since the challenges faced by the new participants in the global market are different from those experienced by the companies in the past, it is extremely important to verify to what extent the traditional model (Uppsala model) is applicable to the contemporary internationalization.

Considering the Chapter III, relevant information extracted from the case study must be examined. Science4You is a young and small-medium size firm that started its international activity 3 years after the inception. Internationalization was already an objective of the CEO of Science4You even before the foundation of the firm which, at that time, was the pioneer in the niche of scientific toys of the educational toys segment in Portugal. Moreover, since the beginning of the internationalization process of the firm, Science4You has entered in multiple foreign markets simultaneously, perceiving each of them as a window of opportunity to leverage the global business. Additionally, networks were extremely important for the firm's rapid and successful international expansion, namely the partnerships with FNAC Portugal, Auchan Portugal and Jeronimo Martins that were crucial to leverage the entry in some important foreign markets. According to the previously mentioned findings, Science4You international expansion is better explained by the *born global* approach and, consequently, can be considered a *born global* firm. However, Science4You developed a strong domestic base before engaging in international activity and, in a first stage of its internationalization process, the company expanded to close psychically distant markets such as Spain, Brazil, Angola and Mozambique. Additionally, psychic distance - administrative and cultural distance – have been impacting the business since, there are several legislative and bureaucratic barriers that affect the company in multiple markets. This is consistent with the Uppsala model (Johanson & Vahlne, 1977), according to which firms face costs when doing business abroad, based on the assumption drawn from Hymer's (1976) concept of "liability of foreignness".

Moreover, the founder of the company did not possess any kind of international experience or knowledge regarding foreign markets, having acquired the needed international know-how with learning experientially over the international path of Science4You. From the above-mentioned information, it is possible to conclude that such characteristics are not supported by the *born global* phenomenon but by the Uppsala model.

Summing up, it is possible to conclude that, despite the predominance of characteristics that better fit the accelerated internationalization, both theoretical perspectives could be seen as complementary in explaining the internationalization process of Science4You, showing that the Uppsala model is still valid to explain internationalization of new ventures that expand abroad early on.

Although this research sheds more light on the topic of firms' internationalization process, it is still characterized by few limitations. These limitations are mainly associated with the chosen research method: single case study. Being the data limited to one single unit of analysis - Science4You firm – the results of the case study cannot be generalized to the whole population. Having included more companies in the research might have led to more complete data and more robust findings, despite the researcher's attempt to obtain complete and comprehensive data. Thus, a recommendation for future research is to study the topic by including more companies through the use a multiple case study in order to provide a more solid base for theory building.

Moreover, limitations are also linked to the author's capacities, since the research results are constraint by the researcher's subjective analysis of the data obtained during the interviews. Additionally, despite the interviewee's high level of knowledge regarding the studied topic, the limited number of interviews (three in total) might have excluded some valid opinions regarding Science4You internationalization process. Consequently, it would be interesting, in a future research, to conduct more interviews to involve more elements within the study and to wider the range of points of view.

Finally, the research is restricted to a firm that operates in the niche of the toy industry. Thus, it might be difficult to generalize the results to other industries in the way that findings might be industry specific, making it difficult to draw general conclusions about firms' internationalization behaviour.

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Appendix

Interview 1 Transcript

Name: Manuel Laia
Age: 29 years old
Position: Partner and International Sales Manager

Q: What are the main products/services of Science4You?

A: Our main products/services are toys. In Portugal, our best sellers are the drones, "Lampada de Lava", "O meu primeiro kit de ciências" and "Magia com ciência". Regarding the international market (excluding Spain and Portugal) our best sellers are "Fábrica Viscosa", "Ciência Explosiva", "Fábrica de Perfumes" and "Fábrica de Sabonetes".

Q: From what I understood, the Spanish market is not included in the international market. I am right?

A: Yes, our structure is split into Portugal, Spain and Rest of the World.

Q: What is the organizational structure of Science4You? (what departments are responsible for what)

A: The CEO is Miguel, there is the internal audit department that responds directly to the CEO, the fab (factory department), the procurement department, the Q&A department (certifications), the R&D department (creation of products, design of the packages, etc..), the sales department (divided by Iberia and International) and the financial department.

Q: In which year was Science4You founded?

A: 2008

Q: What are the markets served by Science4You?

A: Portugal, Spain, Angola, Brazil, Mozambique, Finland, Italy, France, Ireland, Cape Verde, Japan, India, England, Poland, South Africa, Lebanon, USA, Canada, Singapore, Czech Republic, Hungary, Romania, Estonia, Latvia, Lithuania, Serbia, Slovenia, Slovakia, Chile, Australia, China, Denmark, Sweden, Norway, Russia, Morocco, Switzerland, Austria, Dominican Republic and New Zealand.

Q: How many people are currently working at Science4You?

A: Factory: 27 (qualified) + 180 workers + Office: 72.

Q: Please describe the history of Science4You, with special attention paid to major events regarding foreign markets entry (with years given; which markets and when)

A: Company was founded in 2008, where we sold around €100k, we have been growing until now and last year we did around €21M. The international business has growth significantly in recent years. In 2016 we sold internationally around €8,1M and we are hoping to do €13M this year. The main driver of the international revenue growth was the success of the company in the UK market over the last couple of years (the biggest European market) which, subsequently, leveraged the business in other foreign markets.

Q: How did Science4You enter the UK market?

A: The company entered the UK market 4 years ago (very slowly), we had there a contact collaborating with us, but it did not work as expected. Then, half a year later, the company found an agent and the things started working better. The contacts are the most important thing. You can have a very good product, but if you do not have someone to tell other people that your product is good and that know the buyers of the big retail stores and the distributers, it is very difficult to be successful abroad. After entering the UK market, the visibility of the company grew, and things started rolling.

Q: What went wrong in the first experience in the UK market?

A: The company was working directly with the retailers and the business was not achieving the scale we wanted. Then, we failed because we tried to replicate the Portuguese model [stores]. This model does not make sense abroad [this applies also to the Spanish Market] because the stores imply control. Another reason for the failure in both markets was real estate market, which is extremely expensive. The sales volume was not high enough to compensate those high fixed costs. The model was not correct because it was not profitable, we took some steps back, rethought and came up with new models: exporting through distributors in the UK and working directly with the retailers in the Spanish market.

Q: Why and in which circumstances a decision was made to expand abroad?

A: We decided to expand because the market is much bigger. The Portuguese market [internal market] is small, mature and saturated. For example, the UK market has a toy market of 4.2 billion (euro). If the company could replicate worldwide what it does in Portugal, the internal market would just represent 5% of the total sales. For example, in the UK market our product "Fábrica Viscosa" became a huge success when a famous youtuber made a viral video with it [the success was replicated in some other Nordic countries].

Q: How has Science4You (including you and/or other people from the company) made decisions about which foreign markets to enter?

A: There is not a single criterium. We are a company that tries to take advantage of every opportunity. At the beginning, the company bought a "market research" that had the main buyers of most important retail stores of almost all countries in the world. At that time, the company had to "make some pressure" by sending emails, making phone calls, sending price lists and sending catalogues. However, with the success of the UK market and some other markets [like the polish market], there was a turnaround. The company was contacted by company [formed by 3 agents] that works worldwide and after that moment the expansion started to grow. Nowadays, we are working with the top distributors in the world mainly because of the network of those 3 agents. The decisions regarding which market to enter are made by me and the CEO.

Q: What foreign markets entry modes is Science4You is using? (exporting, licensing, franchising, joint-ventures, foreign direct investments: subsidiaries, acquisitions)

A: Agency and Distribution. In the future the company will only work with distributors, leaving the agency mode.

Q: Whether and how strongly Science4You locally adapts its products/services?

A: The company does some adaptations. For example, the language of the packaging as well as the instructions of the toys are translated into the respective language. The products are the same, however there are restrictions in some markets and the company has to adapt. For example, in Dubai we cannot sell our toy "Fábrica Viscosa" because the original has gelatine with traces of pork meat. In Brazil and in some other Latin America countries there are some components that are prohibited, and we have to adapt our products. These are some entry barriers that the company has to face from time to time but that are usually surpassed. Regarding the marketing strategy, each distributor is responsible to adapt it to the respective market.

Q: Which of the foreign markets, Science4You operates on, differs most from the Portuguese one in your opinion?

A: In the Russian market they have extremely requirements regarding the control and the certifications. For example, if we say that we are sending 10.009 "Fábricas Viscosas" and they receive in fact 10.011, the order is stopped at customs. There are also some issues regarding the certifications, for example, our products cannot have gloves, the marbles were stopped at customs, etc, those can be political issues and can be viewed as protectionist policies to protect the internal producers. However, this is not exclusive to the Russian market. In Brazil, we have to pay 20.000 euro to the government every 6 months for them to visit and certify our factory. Due to this problem we are re-thinking our strategy in Brazil. In the future, we will make a royalty agreement.

Q: How these differences affect (affected in the past) and/or hinder(ed) doing business? Why?

A: At the end of the day it does not affect us negatively. The company can have young people making decisions, some people might think we are unexperienced, but we always manage ways to do the things right and on time.

Q: On which markets the differences are most significant for Science4You in your opinion (and why) regarding geographic distance, institutional/legal differences, cultural/linguistic differences, economic distance?

A: Cultural: "Fábrica Viscosa" – Dubai / geographical distance: it does not affect us, for example, we are exporting to China and most of our toys come from China (basically we are sending sand to the beach) / Institutional/legal: Russia and Latin America / Linguistic: no problem due to the translations.

Q: On which markets the differences are least significant for Science4You in your opinion (and why) regarding geographic distance, institutional/legal differences, cultural/linguistic differences, economic distance, technological distance?

A: France.

Q: What are the main benefits of internationalization for your company?

A: There are two main reasons for internationalization: Visibility and Growth. The future is going to be more and more international because of the saturation of our internal retail market. It works almost as a “cartel” and the companies have to accept their conditions. In the international market it does not work that way, they pay before the delivery of the products, leading to a better efficiency, an increase of the cash-flows and better planning.

Interview 2 Transcript

Name: Miguel Pina Martins

Age: 33 years old

Position: Founder and CEO

Q: What are the main motives/reasons behind the entrance in each market?

A: To begin with, the entrance in the Spanish market is easy to explain because it is a neighbourhood country, and, in theory, the closest countries are usually the first choice for the beginning of the international expansion. Consequently, moving between Spain and Portugal is inexpensive and, since Spanish is the second most spoken language in the world, this was an important step to enter in the South and Central America markets. Lastly, the Spanish market is included in the top five of the largest European markets for toys. The UK market was also a natural step in the internationalization process of the company due to the easiness of communication. English is a worldwide language and is understandable by almost everyone, thus allowing the company to enter in a great number of markets. Moreover, the UK market is the biggest European toy market, so those two reasons ended up being the most significant ones and they explain the importance of this market for the international strategy of the company. Then, the entrance in all other countries within the European market is a natural consequence of the expansion and is based on market opportunities. Science4You has not a defined international strategy, most of the times these are clients or distributors who come to us, thus international fairs are crucial to establish those networks. It can be said that the remaining markets came towards us and not the opposite. Obviously, Europe is the continent that makes more sense to have a stronger presence because the production facility is located in Portugal and, as a consequence, the proximity is a competitive advantage. This is the reason for the high number of European countries in which the company is present in contrast with other parts of the world such as South America, for example. Generically, the European Market is the strategic priority. Early entrance in Angola, Mozambique and Brazil can be explained by the common language: Portuguese. Basically, Science4You had already a product for those markets because it was not necessary to make changes. For example, at the time of the entrance in France or Slovakia, the company needed to translate the packages, the manuals, etc. To sum up, there was an important investment behind the expansion to such markets.

Interview 3 Transcript

Name: Tiago Alves

Age: 31 years old

Position: Vice President and Head of International Business

Q: Why did Science4You choose distribution as the main foreign entry mode?

A: Shortly, it is just a matter of efficiency. When we first entered in the international market, the entry was performed directly by us, either by agents or by working closely with the retailers. The company was quite successful, being able to enter in many markets. However, Science4You was extremely inefficient regarding forecasting performance. In other words, retailers are accustomed to have the products close by and to make small orders on a regular basis. In fact, despite working well in Portugal and Spain, the model is difficult to replicate in other markets due to high transportations costs and forecasting constraints. On the other hand, the distributors work directly with their retailers, being able to make forecasts on their own and assuming all the risks associated with those forecasts. Shortly, the distributors operate as bulk buyers, purchasing big quantities of toys from us to sell them later to retailers. They pay in advance and they pay less than retailers [it is true] but the risk is transferred to them. Another advantage of the distributors is that they are responsible for all the marketing, leading to an increase of the sales in the respective market. The agent cannot do this, the product is sent and then is placed on the shelves. There is a gap because the product can be present in the major retail stores [because of the contacts] but the marketing does not exist [and the marketing is crucial to increase the sales].

Q: Why are you going to leave behind the agency mode?

A: Actually, we already left behind agency mode. Nowadays, the company only works with distributors, being the only exceptions the Portuguese market and the Spanish market where we work directly with the retailers. As I said, it was just a matter of efficiency. Agents used to come to us with a request from the retailer. The problem was that agents were not able to force retailers to make accurate forecasts and, most important, they were not able to force them to request orders within a decent period of time.

Q: Science4You is planning to change the Brazilian strategy and sign a royalty agreement. Can you tell me something more about this? What is the advantage? Why are you going to leave behind the agency mode?

A: Science4You is currently negotiating the value and the products that will be included in the contract. This will be an exception; the company is changing the model because it is extremely difficult to export to Brazil. In fact, this is a market with significant barriers to entry where the taxes for products manufactured outside the country are extraordinarily high. Summing up, Science4You is negotiating with a partner to sign an exclusivity and confidentiality contract in which we transfer the formulas, the technical datasheets, etc, and the partner will be responsible to find production plants or local suppliers to replicate our products, paying to us a fixed value plus royalties based on sales. In other words, we are simply doing a licensing contract.

Q: Science4You entered the Spanish market with the help of FNAC and in the polish market with the help of Jeronimo Martins, did the company stablish those kinds of partnerships to enter in any other market? By the way, which type of partnership is it? Contractual Agreement? What is the importance of networks in the internationalization process of the firm?

A: Science4You entered the Spanish market with help of FNAC. Later, the entrance in the French and the Italian market was also supported by FNAC and Auchan, respectively. Regarding the expansion to the Polish market, the Portuguese company Jeronimo Martins played an important role in the success of that operation. What happened in those cases was that we were not supposed to be a supplier of such big companies based on our inexistent market share. At the time of the establishment of such partnerships, Science4you brand was not known in those countries so we can call it a partnership in the sense that without the recommendations of FNAC Portugal, Auchan Portugal and Jeronimo Martins Portugal, probably it would not be possible for Science4you to enter in those markets so quickly.

Q: Why did the company decide to internationalize? What were/are the obstacles face during the process? How did the company overcome them?

A: That is an easy question: the company decided to internationalize because the Portuguese market is too small for the company's ambitions. The main barriers are: translations, regulations, distance, local competition, the small segment in which we compete, the lack of a strong marketing plan (no TV advertisement, for example). The big question here is: Why do the retailers should replace other brands with our brand? In order to increase our credibility within foreign countries we always try to make local partnerships (with universities, museums, etc.). In other words, we try to differentiate our brand and our products.